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# Welcome



e've all heard it, that announcement on the slowing train warning the unwary or novice traveller to 'mind the gap between the carriage and the platform'. A few years ago I started to amuse myself by inserting the words 'between your dreams and reality' every time I heard it, and still do occasionally. Sure, it's not easy to make your dreams come true, but we've got to give it a try or else what's the use? Set your sights high is what I say, and aim for the moon.

Applying this philosophy to my woodworking life as well, I've found that it's best to design exactly what you fancy, then worry about if it's actually achievable later. When faced with some newly acquired materials, try to avoid the 'what can I make with this?' way of thinking. Instead, why not see if you can come up with an idea first and then worry about how to make it later. It definitely helps if someone else like your customer/intended recipient shows more than just a passing interest in your ideas, but don't worry too much about it if they don't; I guess it's unlikely you'll find many other people of exactly the same creative mind as yourself.

#### The reality gap

I've found that most things can be made as imagined, but sometimes the reality of the physical world can stubbornly refuse to cooperate with one's enthusiastic and inspired visions. My latest furniture job has definitely fallen into that category; the concept and design were pretty keen, the drawings excellent and the customer's reception very encouraging indeed. The workshop build went nicely enough – a couple of small changes but that's to be expected, and I felt pretty confident as we pulled up in the van outside. Well, a couple of days into the installation and my plan for execution had started to look a little overambitious. to put it mildly.

A gap between my dream of a giant and elaborate wall unit and the reality of wonky walls, weighty boards and wobbly ladders had certainly started to open up, and I had to abandon my fiendishly clever and elegant plan for a more pragmatic approach. Fortunately – but not without some extra and unwanted work – we managed to get over the difficulties, but I wonder what I'll learn from the experience? Probably not as much as I should do, but if nothing else it's quite possible I'll question myself a bit more closely, and maybe next time I'll be able to keep the reality gap to an absolute minimum – or even make it disappear altogether...



You can contact Mark on mark.cass@mytimemedia.com



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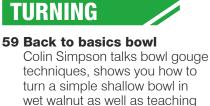












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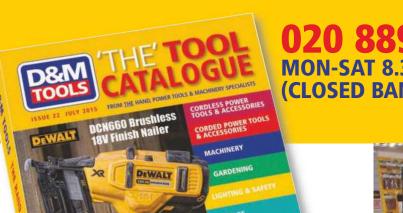
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# In brief...

#### **MAXIMUM SUPPORT FOR FIVE DECADES!**

Now in its fifth decade, the Triton TWX7 Workcentre has been radically redesigned and updated for a new generation of woodworkers and has moved away from an all-steel construction to the latest lightweight, but robust, extruded aluminium frame.

This versatile woodworking station is capable of supporting a 150kg load at the ideal working height of 900mm. A built-in mains isolated switch connector means power tools can be used with the knee-off stop button function. Sliding extensions support wide or long loads, and the frame has an ultra-low friction, textured surface.

Fast switch-out modules transform the TWX7 Workcentre between working modes. Modules are easy to fit, align perfectly with the frame, and can be fine-tuned for accuracy with simple-touse levelling pins. Dual T-track rails run the length of the chassis for



attached. It even fits through a standard doorway so access on confined sites is no problem.

The reduction in weight and the addition of rugged transit wheels and an easy folding frame mean that the TWX7 is not just a tool for the enthusiast woodworker, but it is also a highly capable and mobile multi-purpose workshop tool for professional site use.

Available accessories include Router Module, Contractor Saw Module, Project Saw Module, Side Support and Outfeed Supports, Rugged Transit Kit and Protractor Assembly. The TWX7 now takes a giant leap forward in terms of materials, technology, operational safety and accurate, refined design. Available from www.toolstream.com and priced at £348.04.



#### THIS LATHE PACKS A PUNCH

Record Power's new DML320 cast-iron electronic variable-speed lathe packs a real punch, with a powerful 1hp motor, 305mm swing over the bed and an impressive 508mm between centres. The spindle thread is the popular M33  $\times$  3.5 and the tailstock is No.2  $\,$ Morse taper, with a wide range of accessories available to fit.

The solid cast-iron bed, tailstock and headstock offer superb stability and the high-quality electronic variable-speed function gives smooth and responsive speed change at the turn of a dial, with a highly accurate digital speed readout. This lathe is also capable of reverse turning. Priced at £499.99, it also comes with an industry-leading five-year guarantee. See www.recordpower.co.uk.

#### **AMERICAN-MADE QUALITY**

Available from Woodworkers Workshop - www. woodworkersworkshop.co.uk - this high quality Americanmade router fence is designed to help woodworkers with all woodworking operations from roundovers, raised panel doors and precision edge jointing.

One of the most innovative features of the Woodpeckers Super Fence is its micro-adjustable offset capabilities, which goes way beyond simple shims normally found with router fences. With its offset capabilities you can set an offset of any amount up to 6mm. To make the offset even easier to use, the two fence halves automatically line up perfectly parallel when tightened down. It also has a dust collection port, variable throat capabilities to handle router bits up to 100mm in diameter and multiple T-Slots on every surface.

The Super Fence not only makes it easier to attach feather boards and sub-fences than any other router fence, it's also the first of its kind to allow for the exact position of feather boards, regardless of the thickness of the sub-fence. The fence is nearly 10mm tall and 125mm deep with heavier than usual wall thickness for optimum support of demanding router functions The Super Fence can attach directly to slots spaced 432mm apart from centre to centre and is

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# In brief...

#### **CIRCULAR SAW BLADES FOR ALL**

IRWIN Tools has recently expanded its circular saw blade portfolio to include two new offerings: IRWIN Marples Woodworking Series and IRWIN WeldTec. The brand now has a complete assortment of blades suitable for every application and material.

#### **IRWIN Marples Woodworking Series**

This new category of stationary blades has been designed with woodworkers in mind and boast a longer life, flawless finish and ultimate precision thanks to brazed teeth and laser-cut design. The teeth on the Marples blades are made from hard-wearing carbide; this ensures they stay sharper for longer and allow for multiple resharpening.

The blade is also coated with friction coating that provides a smoother cut, helps to reduce jamming and increases the blade's life span. The coating reduces friction and works effectively with wet or resinous timbers, or when cutting rough timber, softwood, chipboard or MDF. Non-heat conducting aluminium flakes within the coating also help to lower the temperature of the blade.

#### **IRWIN Weldtec**

This range has been designed with the general tradesman in mind with blades suitable for both corded and cordless handheld circular saws.





Weldtec technology includes a unique process of welding the carbide teeth rather than brazing, offering a superior finish, no matter what the material. The tooth bond is 30% stronger than standard carbide, which means they last 50% longer. The blade is ideal for cutting and ripping in all wood and makes easy work of nails that could otherwise cause the blade to break.

Prices start from £15 - to find out more, visit www.irwin.co.uk.

#### **ANY OTHER BUSINESS**

One of my favourite lessons to teach in college is the one about communication. There are many ways to get a point across and no single definitive 'right' way for everything. Like many things, you have to pick the most suitable method of communicating for whatever is the job in hand. Here in the magazine we're restricted to the written word, which still calls for careful and concise composition so as to get the correct meaning fully across.

So, the next time you find yourself wishing and hoping that we'd carry a certain article, why not email me? Not only will this be better than just muttering under your breath or sighing like a disappointed suitor at the end of a dance, but it will actually attract my attention and may well result in making your wish come true.

#### Fair shares for all

Don't forget though, knowledge is a two way street and imparting it to others is all part of the learning process. So, with this in mind, the next time you've successfully completed a challenging project, or elegantly solved a simple one, then why not tell us all about it? It's easy enough and I can promise you a (fairly) speedy reply on the old email. All of us woodworkers like to see how others go about things, and if there's a new technique involved or just a variation on an old one, well, that's exactly the sort of thing we all want to hear about. Don't forget, we're keen and waiting to hear from you, and, as they used to say on the old Robbie Vincent talk show on Radio London, 'take part now!'

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\* Course held in Sittingbourne, Kent

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# What's new from



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#### DML320 PROFESSIONAL CAST MIDI LATHE

MANUFACTURER: Record Power

D&M GUIDE PRICE: £499.99 (inc VAT)

The new Record Power DML320 lathe offers fantastic value for money, being compact and powerful yet with very generous capacities for a medium-sized lathe, giving woodturners the chance to own a highquality variable-speed machine at an unbeatable price. The solid cast-iron bed, tailstock and headstock offer superb stability, even when turning items at the limits of the lathe's considerable capacities. At the heart of this machine is the highquality electronic variable-speed function, giving smooth and responsive speed change at the turn of a dial, with a highly accurate digital speed readout. The three-pulley system ensures excellent torque across the full range of speeds and is powered by a high-quality and vibrationfree motor. The DML320 is also capable of reverse turning, making it ideal for achieving a perfect finish when sanding.









#### M18 BP-402C 18V PLANER

**MANUFACTURER:** Milwaukee **D&M GUIDE PRICES:** £359.95 (inc VAT) (2  $\times$  4.0Ah batteries) £189.95 (inc VAT) (bare unit)



The latest addition to Milwaukee's 18V range is the M18 BP-402C cordless planer, featuring Milwaukee's high performance four-pole motor, which delivers 14,000rpm to achieve optimum surface finish.

REDLINK  $^{\text{\tiny{M}}}$  overload protection and constant speed electronics in tool deliver best in class durability and performance and a REDLITHIUM-ION  $^{\text{\tiny{M}}}$  battery pack delivers up to two times more run time, up to 20% more power, up to two times more battery life and operates better down to -20°C than other Lithium-ion technologies.

Faster material removal is achieved with two double-edged carbide blades over a planing width of 82mm, combined with adjustable depth of cut from 0-2mm with 20 locking positions, which allows the user to accurately set the amount of material to be removed in one pass. Rebate depth is up to 10.7mm. The planer is available with two 4.0Ah batteries, charger and kitbox, or as a body only.

#### DWP352VS 1,010W 75MM BELT SANDER

MANUFACTURER: DeWALT

D&M GUIDE PRICE: £209.95 (inc VAT)





The new DeWALT DWP352VS 75  $\times$  533mm belt sander offers variable-speed for heat sensitive sanding and superior finishing. The two-handle arrangement provides good balance and control – it can also be used single handedly. It's powerful 1,010W motor gives fast, efficient removal of material in a variety of applications. The integrated dust container provides efficient dust collection; the sander is also AirLock compatible. The top exit cordset keeps the cable away from the belt area, preventing interference with sanding operations. Supplied with a dust container – available in 240 and 110V varieties.

# Redefined multi-functional dining

Alina Bajescu discusses the processes for designing a family dining table and how she went about challenging the definition of functionality

esearch into multi-functionality led to the principle that a piece of furniture is only as functional as the user makes it. The design of a product is just an indication as to what it should do, but it is the user who gives meaning and value to features. Too many products claim to solve all problems yet struggle to fulfil at least one purpose, while single function products, such as a chair, can be repurposed to complete multiple actions.

Challenging the definition of functionality, this dining table has limitless features, which allows the user to entirely determine the purpose according to their needs.

#### **CNC** machining

After concept generation and design refinement, a technical drawing with specifications was put together. With that, a CNC machine did all the cutting out. This process ensures exact cuts for complex shapes and repeated forms.

The fascination with plywood came as an early part of the project and the limitless possibilities of manipulating the material's properties and aesthetics. Also, the challenge of combining machine-operated production with classic woodworking techniques and hand-crafted skills was a large part of the concept.





A sheet of birch ply is quickly converted into multiple table parts

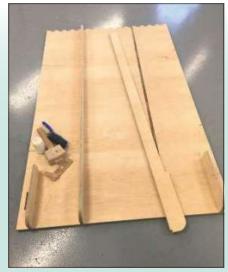


Here they are fresh from the CNC router



Cutting slots and grooving the underside of the table top





Fitting the stiffening ribs and side panels



Cleaning up and oiling the interior



Gluing up the drawers





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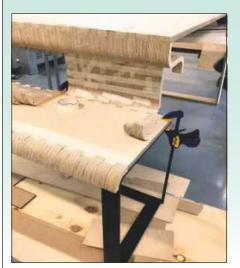
Assembly can be a complicated business



The table takes shape as the central section of 'S' blocks is cramped up



It's a bit like a giant jigsaw, but when you're past the worst of it...



Detail of assembly



The bench end of the table is all glued up



Cleaning up the finger joints on the bench top

CNC machines are great tools; they minimise the possibility of human error in production and work very fast. All the parts could be cut in a matter of a few hours. The tricky part about machine cutting is that there are two possible outcomes: it either all fits in perfectly when put together, or not, in which case there is a lot of work that has to go into fixing the issues.

#### Hand work

The first problem encountered was that the drill bit had a 3mm radius. This isn't a problem when cutting outsides of shapes, but inner corners are rounded off. The finger joint holes on the table top had to be hand filed individually to create the perfect right angle, which was very time consuming.

Measuring the thickness of the ply should have been done before constructing the technical drawing, as this affected the fit.



Developing the curved panels; the one in the foreground was rejected



The final curved drawer fronts and the former they were pressed on



The first coat of Osmo oil goes on



One end of the table features three curved front drawers



The machined profiles create an elegant finger joint with the table top



One touch drawer opening



Alina Bajescu and her multi-function table

The accuracy of the CNC leaves no room for error, and as 18mm plywood is never 18mm, but rather 17.5mm, varying from sheet to sheet, this caused a problem. To fix the error, an extra sheet of aeroply had to be cut for each strip and then hand sanded down to get the exact size. The individual strips were then glued in place one at a time, to ensure a perfect fit.

#### Structural support

For structural support, there are two ribs on the bottom of the table that were slotted and glued into a groove on the underside of the table top. These not only act as the sides of the drawers, but keep the table top from warping throughout time. The end of these ribs continues inside of the curve to give it extra strength and prevents the joints from failing and the curve collapsing on itself.

#### Mimicking curves

The push release drawers were constructed from layers of aeroply, formed over a mould in a heat press to create the same curvature as on the opposite side of the table. Details such as cutting a slot in the sides of the drawer to allow the runners to be covered by the front of the drawer are what give the piece character and consideration. The high-quality runner also adds to the value of the design.

The powder coated steel legs give the table a finished look and contrast with the wide wooden legs, as can be seen on the other side of the table.

This design brings plywood to a new level by paying homage to the detailed aesthetics of the end-grain and using that as a main feature of the table. The undefined features provide the possibility for adaptation to serve different purposes for the various users.

#### Long-term durability

Long-term durability is essential in this design, and being a prototype, issues can be identified through use and misuse, in order to further develop the concept and create a finished product. The first issue to arise with the prototype was that the steel legs were not strong enough. There was a little movement in them due to the weight of the whole table being supported on such a thin piece of steel. The shape should be reconsidered to avoid any long-term bending. Strength testing and time will determine if the whole piece holds up, without damage and warping; this will then give an indication as to what parts need to be reinforced or modified. WW



# In your own write.

Here are just a few of the latest letters we've received since the last issue. Drop us a line on paper or via screen and keyboard to add your voice to the woodworking crowd; you might be one of the lucky few who will manage to get their hands on a coveted Woodworker badge!

#### **SNAIL MAIL OR EMAIL?**

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Andy Standing talked about the spline dovetail in the Autumn issue

#### **SPLINE DOVETAIL** CONUNDRUM

#### Hi Mark.

I enjoyed Andy Standing's article on spline dovetails in the Autumn issue of *The Woodworker*, but he only shows photos of the jig in use when the box is disassembled. I can see that it is relatively straightforward to get two of the corners sorted before the box has to be put together, but when it is, well, how do you support it? Or do you rest the box down, and use the jig at 45°? I'd be grateful for clarification as the joint looks fantastic.

#### **Roger Gray**

#### Hi Roger,

Yes, I know what you're saying. You really need to be able to get your box into the vice, but I have to admit it's still a potentially tricky job. As well as providing a nice decorative touch, the splines are basically a reinforcement for a plain mitred corner joint, and can be executed after the box has been assembled and glued up. A lot of people use that Instant Box Mitre Fix glue (it's superglue plus an aerosol accelerant) to speed things up, otherwise you have to wait until the clamps come off.

I generally do my box splines by hand, but if you've got an important job or a whole batch of them to do, it's worth taking the time to fabricate some kind of router jig like the one Andy showed. I've always found that, because of its versatility, the router can be used for nearly everything you can think of, and even more besides! Thanks for your input, Roger – keep in touch



### COLOURFUL STANDALONE

#### Hi Mark,

I enjoyed the recent news feature on Nadia (Apprentice of the Year) - it's good to see young people achieving on merit.

I'm enjoying the magazine each month, and responding to your requests for projects – I attach a photo of the standalone bookcase I made last week, mostly out of scrap.

#### **Rick Wheaton**

Thanks for the bookshelves photo, Rick - they look great; I especially like the contrast coloured frame. Any chance you could tell us a bit more about it?



#### **INTARSIA PLANS**

#### Hi Mark.

First of all, I would like to say thanks for a splendid magazine - I can't wait to open it every time it arrives. In the recent Autumn issue there was an article on intarsia, showing a barn owl made by Tom Smith. Does he supply the full plans for this project and, if so, where could I purchase them?

#### **David Dutton**

#### Hi David.

I spoke to Tom about plans, but he doesn't have any of his designs for sale at the moment. As you might think, they take a lot of time and effort to design and produce, but he tells me he is thinking of publishing some as a book in the near future.

When you come to make your own, the most important thing about intarsia designs is to keep everything simple. If you take a good photo, it's possible to reduce it down to the important lines, and edit out everything else. You might find it easier if you try manipulating your image in a graphics editing program, such as Photoshop or similar, or just take a print of your photo and go over the most prominent parts with a felt-tip pen before tracing it. I say give it a go myself, and see how you get on! Cheers and good luck!

Mark

Here at The Woodworker we're always pleased to see photos of your work, and we know everyone else is as well! So send them in now and see if you can make the cut.

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BY GORDON WARR

# Checkmate!

Not happy with his grandson keeping his chess pieces in a plastic bag, Gordon Warr sets about making a special inlaid box to house them

**CHESS BOX CUTTING LIST** All dimensions are in millimetres Part Qty L Sides 2 215 56 9 2 135 9 Ends 61 Bottom 215 110 215 9 Top 110

Widths and thicknesses are NET. An allowance has been added to the lengths.

120

82

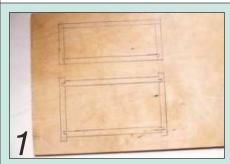
Also required: small quantity of light and dark coloured woods for the inlay and baize for inside of box

ne of my grandsons recently had a set of chessmen given to him, it was only a basic set but nevertheless was worthy of something better to contain them than the plastic bag in which he received them. So he turned to grandpa, with a request for me to come up with something specially made for the purpose...

#### **Basic details**

My first step was to set out on a piece of plywood, photo 1, the basic details of the box in the form of simple drawings, having first established just what the internal sizes had to be to ensure the box would fulfil its basic function of holding them all. I decided on a fairly unusual form of construction, which would give the appearance of the front and back looking like a panel in a frame, and the box would have a loose lid inlaid with a suitable logo.

For this box to be constructed as the drawings show, a router is really essential, and just as important, for this to be used in a router table. Although the construction is essentially simple, it demands precision working for a successful outcome. Good quality wood is needed, although you could use up oddments. I used walnut for the box, with a sycamore inlay, and a very dark rosewood. Ebony would have been better for the dark squares, but the rosewood shows a good contrast with the walnut.



Initial setting out on a piece of plywood



Cross-cutting to length - note that saw guard has been removed for clarity







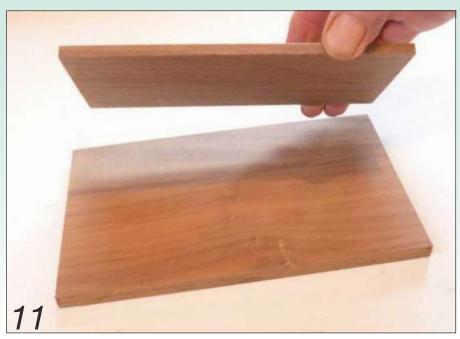
Final sanding is by hand



Box glued and cramped in the vice, removing excess glue with a small brush



Rubbing box over abrasive sheet to gain smooth and flat upper edges



Adding lower lid to the main component

4mm cutter, two passes were needed.

grooves. As I was using the same

Although I have a cross-cut fence for my router table, this is not ideal for small pieces of wood. There is a very simple alternative, and this is to use a small piece of MDF, around 150 × 150mm, photo 5, cut with all corners dead square, and use this to hold the wood as it is passed over the cutter. You need to ensure that the fit of the joints is comfortably tight, photo 6.

#### Cleaning up

Almost suddenly the main parts of the project were ready for some cleaning up prior to assembly. However, because of the rather unusual construction, not all parts needed the same degree of attention. The sides were sanded smooth on both sides as the outer surfaces cannot be attended to after gluing up; the ends were smoothed on the inner surfaces only, while the bottom was smoothed on its upper surface only. Even though I had planned to cover this in baize, the outer parts of this component would be seen on completion. This smoothing was carried out using my belt sander and hand sanding (photo 7).

#### **Box assembly**

The five parts so far prepared must all be assembled as a single stage, photo 8. First the sides and the bottom are glued, with the vice, photo 9, providing an effective way of ensuring the joints are tight, then the ends added. Again the vice is the best method of bringing these parts in tight contact with one another. Because of the nature of the

project, squareness and freedom from twist are automatically gained, but removing any excess glue is essential while still wet. For this I used a small brush and a little water, but drying the surfaces when the adhesive had been cleared.

Once the glue had set, a little levelling and smoothing of the outside were required. Again, I used a combination of power means and hand techniques. I would normally strongly advocate that sanding should be restricted to smoothing a surface, and not for levelling purposes. However, there are exceptions to most things, and this is one of them. In order to ensure that the upper edges of the sides and ends are level and smooth, I spread a large piece of abrasive, photo 10, onto the infeed table of my planing machine and then rubbed the box over this. It was easy to check the accuracy of the levelling by placing the box face down directly on the planer table.

#### Put a lid on in

The lid is in two parts. I prepared the upper component so that it was marginally longer and wider than the lower part of the box; this would enable it to be finally made level with this part. The under lid was carefully made an exact fit within the box, photo 11, with only a whisker of clearance so that it would not become wedged. I relied on very accurate measuring to align the two parts together, photo 12, gluing and cramping them in the vice along with G cramps.

Now the slight excess on the length and width needed to be trimmed. My aim was to make the lid a good fit and equally so when positioned either way round. This was achieved by carrying out the levelling with the lid first one way round, and then turning it though 180°. In fact, this part of the project was completed by reversing the lid several times and using a combination of power and hand sanding, photo 13, so that the fit was equally good whichever way it was positioned.

#### Preparing the inlay

Now it was on to preparing the inlay. I planed two lengths of sycamore and two lengths of rosewood to 10mm square, then glued them together side by side, photo 14. Next, I reduced the thickness of the assembled strip to around 6mm and cross-cut several pieces to a length of exactly 10mm, photo 15. Finally, four of these pieces were glued together to give a square but with the light and dark woods alternating to give the required checkered effect.

With the inlay positioned in the centre of the lid, it was marked round using a

The two parts of the lid being cramped in

the vice





A little hand sanding always helps



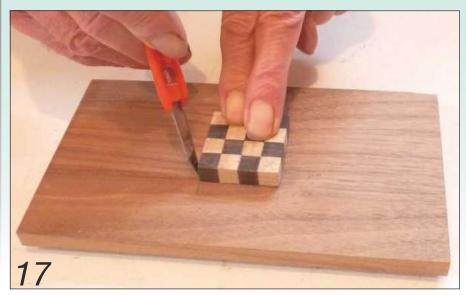
The pieces for the inlay being cramped together



Sawing the lamination to give 10mm pieces



Four pieces being glued together and held in the vice



The inlay positioned in the centre of the lid and being scribed around



Most of the waste from the recess being removed on the drilling machine



The recess is completed using a chisel



The inlay glued in place and awaiting levelling



The inside of the bottom of the box is covered in baize



fine-bladed knife. The recess for it was prepared to a depth of approximately 4mm. I initially removed most of the waste on my drilling machine using a Forstner bit; this gave a uniform depth and a level lower surface - the remainder of the waste was cut away by chisel and mallet.

Before gluing the inlay in place, I formed tiny chamfers around the four lower corners; these would allow for easier insertion. I used only a small amount of adhesive, photo 20. It's important for the inlay to be in close contact with the bottom of the recess and not be resting on a pool of wet glue. If too much glue is used, the inlay will not bed properly, and as the glue dries out it will shrink, and as this takes place it will draw the inlay further into the recess and thus cause a slight depression. This may not show until long after the project is completed. Remember that when inserting the inlay, it is important to have it correctly orientated, **photo 17** – the double black squares must be in the right-hand corner.

#### Levelling off

I allowed a full 24 hours before levelling off the projecting inlay, then thoroughly sanded all surfaces of the lid and indeed a final sanding to the whole of the box. I used satin pre catalised lacquer for the finish, known simply as 'pre cat', and applied three coats to all surfaces, with a couple more to the top. I use a polisher's mop, to apply the lacquer and thinned this down with around 10% of cellulose thinners flatting down as the lacquer is applied.

The last coat is abraded with '0000' steel wool dipped in soft beeswax and finally burnished with a soft cloth.

#### **Finishing touches**

Just one stage remained, and that was to cover the lower surface of the box with self-adhesive baize, photo 21. There is a technique to using baize for this purpose, which helps to avoid it sticking to everywhere except where intended. First, a piece must be cut to the exact size of the inside of the box, then the backing paper scored through at around mid length, and one half of the paper peeled off while holding the exposed end of the baize in one hand. The other end is positioned in the box, then the exposed end carefully lowered into position. Now the opposite end can be lifted, the paper peeled off, and this end lowered. My box was completed, photo 22, and my grandson was delighted that the original plastic bag which held the chessmen had been replaced with something more appropriate. WW



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BY ROBIN GATES

# Part 2 Stay sharp!

### **Robin Gates finds ways** for preserving his sharp edges and improving his sawing technique

affled by what to make with my growing pile of offcuts, I am encouraged by a scene from the film Apollo 13. With CO2 levels climbing to dangerous levels in the lunar module, the engineers on the ground are tasked with making a square filter fit a round hole using what looks like leftovers from the white elephant stall at a church fete. And the take-home message is this: it doesn't have to be pretty – it just has to work.

#### **Edge guards**

The tool well on my old bench saved many a small tool from free-fall to oblivion. It was also a convenient staging post for shavings in their journey to the bin. But here was a rare example of two pluses making a minus: the dusty depths of the tool well attracted sharp edges and while probing for the bradawl inside a fluffy mound of shavings,



Use a slip of wood slightly longer than the blade for an edge guard



I sliced my finger on a buried drawknife and decided there and then that my next project should be edge guards. An edge guard or keeper is simply a grooved slip of timber, photo 1, that fits snugly onto the blade, tied by a cord. It's especially useful for a drawknife whose twin handles make the tool unbalanced if picked up one-handed, so that I'm tempted to grasp the blade. It's not



Mark the centreline freehand using your fingers as the fence

just a matter of safety either. If unprotected, edge tools jostle together and soon blunt, so all that time spent on honing is wasted.

An edge guard is an ideal use for narrow offcuts. It doesn't matter exactly how thick they are so long as there's enough thickness to cut a slot with sturdy sides. I used some 20 × 11mm softwood ripped from the edge of some shelving.



The saw makes a slot for itself



Easing the corners of the slot with a chisel makes the guard easier to fit



Threading a shoe lace to act as the tie



Ploughing a slot for a drawknife blade using the Record 043



Edges are protected from blunting in the rough and tumble of the bench



One-piece side hooks are marked out in an elongated 'Z'



Cross-cutting the waste at regular intervals



Chipping away waste with a chisel. The cross-cuts act as stops



Levelling with an apron plane

12 Side hooks are used in pairs to support longer work while sawing



To make the guard for a tenon saw, the most important tool is the saw itself. Having run a pencil down the centreline, photo 2, I began sawing the slot at one end with the saw tipped up at about 20° from horizontal, photo 3, advancing the kerf along the line and to around 10mm in depth. This was repeated at the opposite end while gradually lowering the angle of the saw until the two kerfs met and became one.

I allowed an extra 6mm at each end of the guard to cut a radius with the coping saw, and used a chisel, photo 4, to chamfer the corners of the slot so the blade would slide into place more easily. Halfway along the length a 3mm hole accommodates the cord. Old shoelaces, photo 5, are ideal for this because their aglets prevent fraying - and you'll instinctively tie a bow. The drawknife can't cut a slot for its own edge guard but here was a good excuse to deploy the Record 043 plough plane, photo 6. The blades of old drawknives vary

a good deal so there's a degree of trial and error in making a snug-fitting guard. To prove the point, the edge of my 305mm drawknife was accommodated by a slot from the smallest cutter, at 3mm, while my 150mm drawknife required the 6mm cutter.

#### **Bench hooks**

Until recently the only bench hooks I made were based on the battered things I encountered in the school woodwork shop as a kid, but through delving into old books, I've come across a second and probably older type variously called the 'side rest' or 'side hook'. Side hooks are typically used in pairs, supporting longer pieces of timber for cross-cutting. While providing a firm stop to push against, they also lift the timber so you don't saw into the bench. Unlike the 'old school' bench hook, each of these is sawn from a single piece of timber but the net result is similar, giving two shoulders disposed on opposite sides of the base

- one to hook over the edge of the bench and the other to anchor the workpiece.

For this pair I used 305mm lengths of 70 × 41mm spruce, marking them with an elongated 'Z', photo 8. The shoulders reach 50mm from the ends and are 20mm deep, leaving about 20mm thickness for the base. The 'Z' configuration results in the shoulders being canted very slightly towards the base, which seems to improve their grip. With machinery you'll rip these hooks to shape in no time but it doesn't take long with hand tools either. If you cross-cut the waste at about 25mm intervals, photo 9, you can knock it out quickly with a chisel, photo 10. The cross-cuts work as stops, making the process more controlled. A modicum of levelling with the apron plane on the bases, photo 11, using a chisel to pare up to the shoulders, and they're done. So long as they're square and flat there's no point in fussing over the finish, photo 12 - they're only offcuts after all. WW



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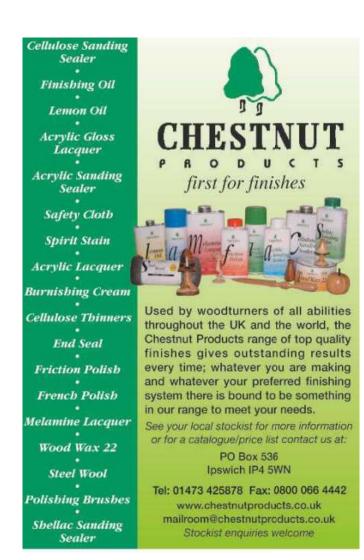
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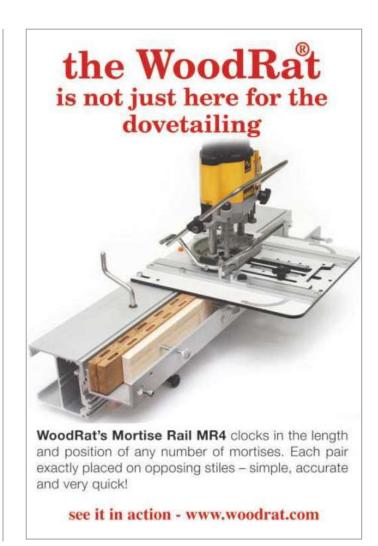
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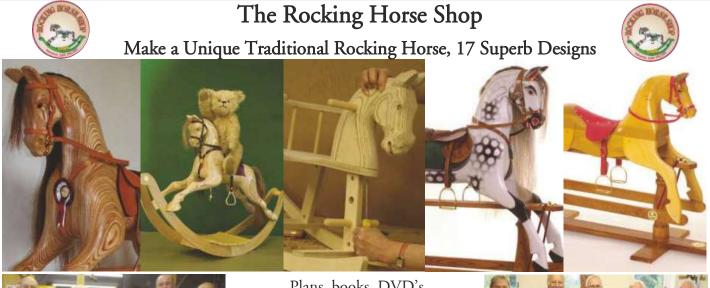
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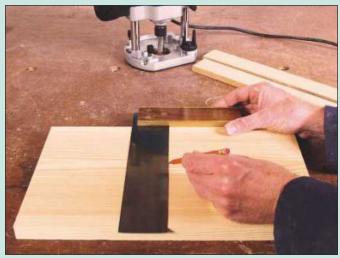




# Safe as houses

Joint master Andy Standing introduces us to the dovetail housing joint, which is ideal for use when constructing shelving units or cabinets. You also only need a few pieces of kit in order to make it

> he housing joint is particularly useful when constructing shelving units or cabinets. It precisely locates shelves or partitions in position and is an easy joint to cut. However, the one weakness it has is that should the carcass become stressed or distorted, for any reason, the joint can be pulled apart as it has no mechanical grip. So, for instance, should the uprights in a bookcase bow outwards, the shelves would fall out of their housings. One way to guard against this possibility is to use a dovetail housing instead. All you need is a good router, a dovetail cutter and, ideally, a router table. WW



**1** Start by marking out the position of your joint on the side panel. Just use a single line to mark the centre of the joint



2 Unless you want the dovetail to show through on the front of the joint, you need to mark a point where the housing will stop. This should be 5-10mm from the edge



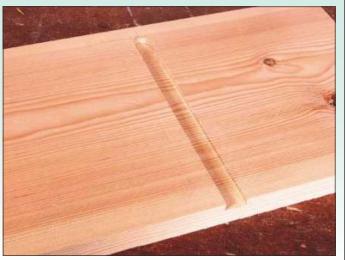
3 Fit your router with a dovetail cutter. The diameter should be reasonably close to the thickness of the shelf member. To centralise the router on the line, unplug it, stand it on the board and plunge the cutter down to touch the surface. Turn the cutter by hand and move the router until both the cutter faces are exactly on the line



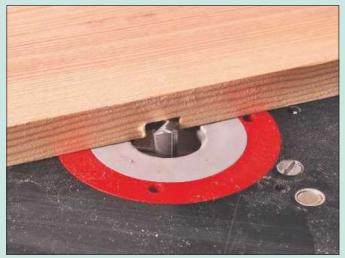
4 Using a try square, align a batten with the side of the router and clamp it in place. For added security, you can put another on the other side to sandwich the router, although this is not entirely necessary



5 The housing does not need to be too deep and certainly not more than a third of the thickness of the side panel. Set the router to the required depth and place it on the edge of the workpiece. The joint must be cut with the cutter at full depth from start to finish. Plunge the cutter fully, start the router and move it smoothly into the work, keeping it hard against the batten. When you reach the end mark, stop the router and switch off. Do not release the plunge lock. Once the cutter has stopped spinning, pull the router back out of the cut



6 Your housing should look like this



 ${f 7}$  Fit the router cutter into your router table. To set the depth, lie the machined board on the router table and raise the cutter until it just touches the bottom of the housing



8 Position the fence so that the cutter will take a shallow cut and run the shelf board vertically past it. Machine both sides



9 Check the fit, re-set the fence and take further shallow passes on eachside of the shelf board until it is a sliding fit in the housing



10 Lie the shelf board on the side panel and mark the end of the housing on it



11 With the dovetail cutter set at the same height as before, move the fence back and take a series of cuts until you reach the marked line. Use the mitre fence to support the workpiece on the router table



12 The finished joint. It should be a tight fit and may need tapping home with a hammer and a woodblock





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Makersmith staff have 35 years design, manufacturing & installation experience and the business has recently invested significantly in advanced manufacturing technology to enable people and business to make exactly what they need.

Gareth Davies, owner of makersmith says: "We understand that individual woodworkers as well as small & medium size businesses don't always have a clear route to access the latest design and manufacturing technology. We have the experience and capacity to support them and to be effectively an extension of their own workshop facility.

We are a creative business and our design capacity means that we can help clients with new solutions and new ideas as well as straightforward CNC processes. We are excited to be able to support woodworkers and the woodworking industry and are looking forward to providing this whole community with our services."

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### In brief...

#### A GREAT WEEKEND OF TURNING

The ToolPost, located in Didcot, Oxfordshire, will open its doors this November (7-8) for its annual Open House event. Featuring an impressive array of UK woodturners, including Gerry Marlow (a very popular and versatile turner who always has new tricks up his sleeve) and Jason Breach (master of brilliant box-making), you can also enjoy displays of woodcarving from Simon Clements and pyrography from Bert Butterfield, plus the chance to chat to many of their suppliers. Enjoy the informal setting and the chance to get 'up close and personal' with these highly skilled and fascinating

As always, you can expect free parking, free entry, free demos and refreshments, as well as a number of 'deals of the day'. See www.toolpost.co.uk to find out more.



### **2015 ULTIMATE TRADESMAN ANNOUNCED**

IRWIN Tools recently announced the winner of the 2015 National Tradesmen Day competition as Stacey Greenwell from Stoke-on-Trent, who impressed the expert judging panel with his dedication



to the community. He was nominated for his commitment to rejuvenating what would be derelict areas of town, in order to provide homes and jobs for those in need. He was one of hundreds of nationwide nominations and beat five other finalists to be crowned the 2015 Ultimate Tradesman. As this year's winner, Stacey will drive home a brand new Ford F150 4×4 truck worth over £35,000. He commented: "I'm so thrilled to win the

competition. It feels good to know the work I do is appreciated and this award is a testament to the great team of individuals I work alongside. I never win anything and I know my family will be really proud."

To keep up-to-date with news of National Tradesmen Day 2016, please visit www.irwin.co.uk.

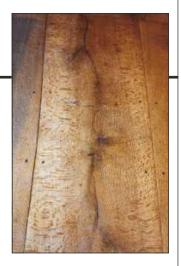


### **PAYING HOMAGE TO OAK**

Jack Badger have been nominated for an International Product Design Award with their project 'Wide Oak Flooring'

In this ever disposable world they have approached the subject of flooring with a focus on sustainability and efficient use of materials and have adopted age-old methods of making and fitting their floors.

The company lay their floors in traditional bays (sections) and finish them with hand tools, combined with the use of a modern computer-based planning system that works out the bays as you enter the timber used.



Every board in a Jack Badger floor is numbered and entered into an overarching room plan after being machined to its maximum size in the workshop. Due to this every board is completely different from the next, making them entirely non-standard. This requires a level of intelligence in the process, which is where the home-built computer tool comes into its own.

The company utilise the whole of every plank - in essence, paying homage to the life of the tree, which in the case of oak is a very long time. See www.jackbadger.co.uk.

### A TRULY BESPOKE FINISH

Bespoke furniture designer NEJ Stevenson has been commissioned to create the furniture for the luxurious marketing suite at one of London's most exciting new developments, Lillie Square, with interior designer Hudson and Mercer, contractor Knight Harwood and architect XAB.

The marketing suite project by NEJ Stevenson will feature exquisite joinery in the Gallery area, with the carcass and doors to be made in dark stained oak veneer with a lacquer finish. This commission will also comprise a 14m seamless run of bespoke cabinets, panelling and jib doors, with a matching table, which will display a scale model of the development.

NEJ Stevenson specialises in custom-made furniture and bespoke architectural joinery. As cabinetmaker to The Queen



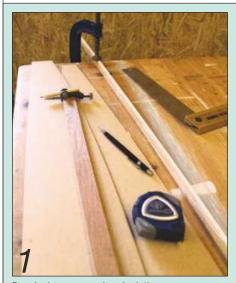
and Royal Warrant holder, the company has developed a reputation for crafting some of the finest contemporary and heritage furniture available. From individual pieces to entire room interiors, NEJ Stevenson's furniture can be found within luxurious private residences, historic buildings, places of worship and high-end retail spaces. See www.nejstevenson.co.uk.



BY MARK CASS

# Fits like a glove

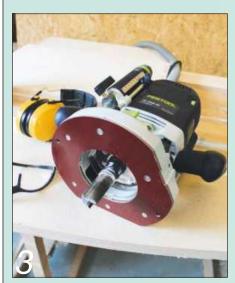
Mark Cass was commissioned to make a custom veneer laminated curved cabinet - he shares the trials and tribulations with us here



Developing a curve; bend a lath or reach for the trammel heads



For a long and gradual curve, a steady hand is required on the bandsaw



A template follower cutter on a big router will form a professional curve



Using the front edge of the curved rail, the inner curve is marked out with a shop-made pencil gauge

nome jobs seem to come ready formed; the type where all parties concerned have a similar and clear idea of what's required and it's just a case of saying 'go'. Most take a bit of discussion, a sketch and a meeting or two, but there are some that seem as though they'll never see the light of day. Such a job recently was this fitted unit, which eventually curved its way across a fireside alcove via a seemingly endless series of changes and revisions.

The big challenge with fitted furniture as opposed to the free-standing stuff, which you just bring round to the customer's house, plonk down and give it a bit of a dust-off – is to not only make it fit, but to make it look like it fits. Yes, fairly obvious you might say, but generally trickier than it looks, what with the less-than-square nature of your average house and all the random angles that lie therein.

#### Survey

Accurate measurements sensibly recorded is the first step, followed by a photo or two as an absolute minimum. If possible you should try for a template of an irregular wall or a simple rod to record key dimensions; and, as with most things in life, never assume anything, but check it again... There is generally the odd detail which can be resolved on site, but I'd recommend the complete and thorough technique where every constructional detail is considered and planned at this early and vital stage.

### **Curved template**

Once my own design was finalised, the next job was to make a template of the asymmetric curve, which would form the front face of the unit. Thin MDF is perfect for this, but try and use 6mm rather then 4mm, as it's a lot easier to run a bearing-guided router cutter along than the thinner stuff. Big curves can be tricky to set out, and you only know you've got it right when you can look along it and be pleased with what you see. Bending a thin strip of wood between two



pins or similar will sometimes suffice, but for a long curve you may not be satisfied; I know I wasn't. There was only one thing for it, I'd have to get the trammel heads, **photo** 1, out and a lengthy piece of timber. After a bit of trial and error, I was able to produce a satisfactory curve with a radius of a little over 3m. I cut this out on the bandsaw, **photo** 2, in preference to my jigsaw, and cleaned up the edge to a high degree, after all, this was to be the reference for the entire job and was therefore fairly high up in the importance stakes. Its first job was helping to make the carcass. Unlike some fitted cupboards, which consist of little more than

a frame fixed to a wall or two with a couple of doors and a top, this particular job needed to be made as one solid unit. I've found that anything with curved doors will always benefit from a fixed and rigid frame, especially if said doors are to be veneered...

### **Carcass**

The carcass was a straightforward construction: two unmatched sides, a base, and front and back rails for the top. Both the front rail and the front of the base shared the same curve and had been cut oversize then trimmed back on my big router fitted with a template cutter, **photo 3**. If you take

care with your template and your routing, this will produce a clean and accurate profile every time, and one which needs very little cleaning up. Although the front of the top rail needed the curve, it could be argued that the inner edge did not. In my lifelong quest for art and beauty, I often find myself going to excessive lengths to make the unseen parts of a job look great, and so it was with the front rail – I had to curve the inside too.

The simple thing to do here was to run a pencil gauge, **photo 4**, set at a generous 100mm along the front and then just cut it out on the bandsaw. All of the carcass



The curved former is built up of sawn and routed ribs with double ply to finish it off



Laminating a curved door in the bag press: four layers of 4mm birch ply results in a nice door, and close to 18mm when veneered both sides



This bandsawn gum veneer is far from smooth and needs a pro glue like Titebond



A good quality masking tape will hold your veneers in place and ensure no movement during the pressing process



Out of the bag press, it's just a case of removing the tape as this particular veneer needs no cleaning up



The carcass gets the side panels fitted. Note holes in the side for the adjustable shelf

components were then biscuited together; the whole lot sanded and varnished before being glued and cramped up. I drilled both ends for adjustable shelf fittings; I've found this method to be the simplest and most effective way of providing storage flexibility on a job. So, that was the carcass mostly done - except for the top - and it could now be put aside while I prepared the doors.

### Vacuum bag press

One of the best innovations of recent years has been the vacuum bag press, which is little more than a simple means of utilising

the natural atmospheric pressure of the air (approximately equal to a force of 10N), by evacuating a large rubberised plastic bag, which contains the work. In the case of curved laminations, multiple layers of ply are glued up and shaped around a stout former, the job being released from the bag and its pressure after the glue has set.

Like many formers, mine was to be made of MDF, photo 5, and there really can't be many better jobs for using up your scraps and offcuts. The trick is to get them all identical so that your former will be nice and uniform. Really the best way to do this is to

make up a custom jig and to shape the component parts on a spindle moulder. Sadly the Neon Saw workshops are not fully equipped with spindle tooling, so it was a job for the big router. By reducing the number of curved ribs by half and skinning them over with a couple of pieces of ply, I reckoned I'd have a halfway decent former.

### Veneers and pressing

I went for four layers of 4mm birch ply, photo 6, for my doors; with the veneers front and back they would come out close to 18mm, a suitable thickness for most jobs of this size. Whenever large areas and adhesives are involved, there's always the likelihood that things will slide around a bit, so it's advisable to make things oversize and then trim your panels down to the exact size once the glue is set. The best glue to use for laminating work is Cascamite as it sets hard, unlike PVA, which remains soft(ish) and can allow curved work to deform over time.

Due to a slight oversight in the veneer department, the customer's chosen veneer wasn't available on the day, so I went ahead and pressed up the doors without it. This wasn't such a bad thing as if anything had gone wrong then at least I hadn't wasted the veneer as well. A good job too as it was a bit of a scarcity - bandsawn gumtree, photo 7. As well as enhancing the visual interest of the veneer, the saw cuts add a textural quality. Before any gluing can take place, though, the veneer needs to be laid up or prepared. This is where you get the chance to present the work in whichever way pleases you - always a satisfying task. This job was made easier by having my veneer supplier trim the leaves on his guillotine; if you've ever tried to cut dry veneer with a Stanley knife and a straightedge, you'll know just how tricky it can be. Once I'd made my selection of leaves and choice of layout, I tightly taped the pieces together with a good quality masking tape, photo 8, being sure to rub down firmly with a custom burnisher.

So, it was back into the bag press for the final time, photo 9. I decided to go for Titebond glue for this final pressing stage; it's a superior adhesive product and, as the surface area of the veneer was markedly reduced with the irregularities of the bandsawn veneer, I felt it would improve the chances of a solid job. With an attractive front and back the doors were starting to look like something, especially after I gave them a careful trimming on the table saw and cleaned up three of the edges with a sharp plane.

### **Swinging doors**

I decided to go for a half decent piano hinge instead of regular butts or the Soss type of hinge, but I did need to make up a couple of side frame panels, photo 10, to complete the curved front and to provide a matching edge for the doors to hinge onto. I veneered these up - clamped between heavy Gs – then biscuited them onto each side of the carcass, photo 13. After checking that the doors would swing OK, I put them to one side so that I could give them a final fit on site.

With all the basics covered, I now had to turn my attention to the top of the unit. The customer wanted this to slope from back to front so as to prevent clutter building up and generally keep things tidy. Not such a problem you might think, but, what with the curve and the asymmetry of the unit, it wasn't quite as straightforward as would be preferred. Once I'd put a number to the slope in terms of degrees (15), it was just a case of cutting out four or five triangles, photo 11, (or firring pieces if you think in flat roof terms), which diminished in size to accommodate the gradual taper from one side to the other.

### Site installation

With a workable plan in hand, it was off to site for the actual installation of the cabinet. This can be a slightly nerve-racking business, especially the first hour or two when you see if you've got everything the right size. Fortunately I'd had the sense for once - of making a template, but it was still a relief to see the carcass sit snugly into its alcove destination where it rested happily on the skirting boards (the off-the-floor look is currently very popular in my part of the world). Fixing a four-sided carcass to the wall is obviously necessary for a fitted furniture job, but be careful as it's very easy to slightly distort it without realising - to the detriment of the door fit.

With the unit secured in place, my triangles were fixed to the top rails, front and back, and short lengths of batten fixed to the wall between each one, photo 12. There now began probably the trickiest part of the job – laminating the top. The plan was to glue and pin three successive layers of 4mm ply to the triangular ribs as well as the wall battens and the front rail. With each one I would be able to get a better fit to the walls, with the top layer - already pressed and veneered - the best of all.

I kept the pins to a minimum on the top layer, resorting instead to masking tape and heavy weights to hold things down so as to keep it all blemish-free. The edge was



Cutting the triangle to achieve the sloping top. Repeat cuts are made with the template and board held in place with a sacrificial batten

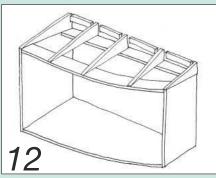
The exposed side and front edge of the curve were veneered in situ with PVA and a hot iron





The finished job seems to have attracted universal admiration

cleaned up with a sharp block plane and prepared for site veneering, along with the wide side of the carcass. This bit of the job couldn't have been veneered first as the triangle top supports had yet to be fitted and I didn't want an ugly visible join. While it's possible to use a contact adhesive for this sort of thing, I went for the PVA method.



My sketch of how the top was formed on site. Note wall battens between the ribs



One of the press-to-open catches chosen to retain the simplicity and clean lines of the finished unit. The textural quality of the sawn veneer is clear to behold

This involves coating both surfaces with white glue, letting them dry, then passing a moderately hot iron, over the outer layer once they're in position. A certain amount of movement is possible here, but the glue doesn't take long to go off, so, as ever, just watch out and be prepared.

With the top and side finished, all that remained was to re-hang the doors and to give them a bit of a tweak-up. The catches were the press-to-release type, photo 14, and fitted very nicely to the underside of the curved front rail, while helping to retain the clean lines. A variety of finishes had been considered, but in the end we went for a sealing coat of Osmo oil (nice and pale and hardly changes the colour of the timber) followed by Liberon's Black Bison wax (neutral colour). It was a long time coming, but we all decided that it was well worth the wait, photo 15. WW

### **FURTHER INFORMATION**

#### Osmo oil

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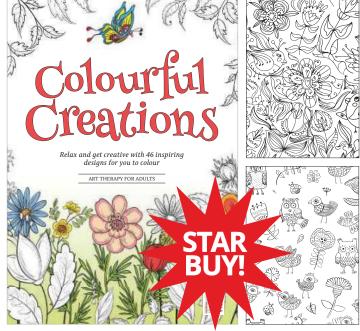
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### In brief...



#### **COMMUNITY CENTRE TRANSFORMATION**

Travis Perkins plc 'Pace' management team and local tradespeople collaborated with charity Northampton Community Spaces to refurbish one of their Community Centres, Standen's Barn, into a warm, welcoming and safe place for groups to meet and socialise together – and the entire project was completed in only 48 hours.

The 14 volunteers concentrated on the redecoration tasks, including the painting of all communal areas. The kitchen, featured in solid oak, was provided by Wickes and the refit was carried out by local tradespeople, including local kitchen fitters and electricians.

The charity, Northampton Community Spaces, which runs and manages eight community centres in total, is very popular and host around 77 groups, seven days a week. Standen's Barn welcomes members of the local community from all walks of life, from tiny-tots to the elderly, and hosts a variety of events and activities across the week.

### **FURNITURE UP NORTH**

Furniture maker Nick James recently took part in the Northern Design Festival in Newcastle, where he showed his new range of furniture. This event was established in 2005 to showcase



good design and support designers across the Northern region. 2015 marked the event's 10th birthday and over the last decade they have welcomed over 250,000 visitors to their festivals, worked with in excess of 1,400 designers, delivered 25 talks, 15 workshops, and held over 120 exhibitions and

events. To find out more about the event, see www.designevent.co.uk and to view more of Nick's work, see his website: www.jamesdesign.co.uk.

#### **BEETLE INSPIRES LUXURY CABINET**

Bertram Whitford has just unveiled his latest piece, the 'Lyctus' cabinet, which was inspired by discovering lyctus beetle tracks in boards of London plane he had stored. The holes it left were riddled in the sapwood of every board, which was frustrating as he'd planned to use the waney edge of these boards in the construction of a speculative cabinet. However, turning these to his advantage, Bertram decided to highlight the path of the beetle by planing the timber down to reveal the horizontal pathways through the sapwood. These were then filled with liquid copper paint (not before thoroughly treating the timber against further infestation), to complement the copper rod supports.

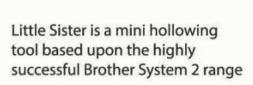
"I enjoy using, designing and making tambours. In construction they are multiple lengths of wood attached together on the back by a piece of flexible material, in this case calico. A rebate at each end allows the component to slide freely round curves within grooved tracks in the cabinet sides," he explains. Here, ash was used as a substrate and aspen veneer was applied on the face side of the tambour, with the calico being glued to the back, acting as a balancing veneer.

Another feature incorporated into the design was for the tambour to be partly visible as it travelled up and away. This was achieved by lifting the 'hat' of the piece up on the copper supports, a feature replicated at the bottom of the carcass for continuity and also lightness of appearance.

The veneering was done in a vacuum press. The hat and shelves were constructed with flexi-MDF, which is ribbed MDF sufficiently malleable to take the shape of a forma when pressure is applied. The shelves are made from two 6mm pieces of flexi-MDF and then veneered top and bottom with aspen veneer, and finally also lipped with the aspen.

The rails that the shelves tenon through had angled mortises cut into them, which was achieved by making an angled jig for the rails to sit on while being cut.

Finally, the copper pull had to be created to allow for smooth operation of the tambour. Handles can make a disproportional difference to the overall feel of a piece, for better or worse, and careful consideration in this case was also required. In the end, using the timber as a guide and keeping it simple won favour. Blessed with a concave dip in the bottom of the frame, a copper lip set into the tambour mirrored the form of the live edge of the London plane, and created an inviting interstice for the hand to explore. To see more of Bertram's wonderful work, visit his website: www.bertramwhitford.com.



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## Illuminated reading

### This lamp by Peter Benson is simple but the long pieces pose some handling challenges

he arm of this lamp handily reaches over the shoulder of the reader. I first prepared a prototype in pine and the length and angle of the arm were made adjustable. I began trying it at various angles to see what worked best.

For the final run, I used a chunk of seasoned oak, which looked like a railway sleeper. It had been maturing for many years and was almost too heavy to lift. The first task was to slice off a 1.8m long pole and take off the 'skin' of grease and grit.

My circular saw could not cut all the way through, so it had to be attacked from both sides, then I used a belt sander to remove the coating. Only after that did I dare run it

through the table saw, which was tricky as it did not have a single straight edge or side that I could follow. So I made a jig to hold the oak and run down the rip fence. A baseboard of 6mm ply was just thin enough to allow the blade to cut right through the oak pole. I attached this carrier to the underside of my piece, using a countersunk woodscrew at each end, screwing into parts that would eventually be cut off. Now I could run the edge of the carrier down the fence of the table saw to get a straight edge. I was eventually left with a straight pole,  $50 \times 31$ mm and 1.8m long. The length was also a problem, so I constructed an extension table for the table saw using a rolling pin.

### MAKE.

Step 1 After cutting your pieces to size, round over the top of the pole (A). I used a handsaw to remove a 45° corner then sanded to final shape, photo 1.

Step 2 Cut the tenon at the bottom of the pole. I did this with the table saw, removing the riving knife so I could nibble the tenon. This posed no unusual hazard, since there would be no offcuts to jam and cause kickback, and my homemade saw guard remained in place as always, photo 2. The tenon goes through the base and has shoulders only large enough to hide any discrepancies in the final joint.



To round over the pole, clamp a sander to a bench and move the workpiece in an arc

Step 3 Having established the arm angle, cut the mortise: I used the slot-mortiser of my Kity combi. The corners were rounded by the cutter, but I wanted to round over the edges on the arm/tenon to match.

Step 4 Round over all edges using a router and a 1/4in round-over cutter. Due to the pole's length it's difficult to use a router table. I clamped the pole to the edge of the workbench and clamped a similar piece of pine to the pole, with a couple of spacers between, so I had two pieces to rest the router on, with a 'channel' for the cutter to run in. For the top of the pole I clamped a



It's best not to run a workpiece against the rip fence while cross-cutting, as it can catch



An adjustable prototype helped determine the angle

couple of scraps to the bench to give me something to rest the router on.

Step 5 I planned to run the wiring in a slot along the top edge of the arm, down through a hole in the arm, then in another slot down one face of the pole. At the bottom, the wire would pass through the mortise and under the base. You could rout the slots in the arm and down the pole but I used the table saw, making a 5mm deep cut as I passed the pole along the fence.



The slot mortiser on the Kity combi machine made easy work of the mortise

Note that at the bottom of the pole, the slot continues to the end, but the wire joins only below the arm, so the slot must not go all the way to the top of the pole. I practised on a piece of scrap, marking on pieces of masking tape stuck to the fence and on the pole to indicate where to stop. Since the wire was 5mm diameter and the saw blade cut a kerf only 3mm wide, I moved the fence 2mm and repeated the cut.

**Step 6** Rout a double rebate for the push switch: one for the body of the switch and a shallower one for the cover plate.

Step 7 Sand down an offcut to make a cover for the switch. Drill a hole for the switch, then drill and countersink for No.4 screws.

Step 8 Create the arm (B) from a slimmer piece of the oak, 38 × 20 x 711mm long, planed, rounded at the lamp end and along its edges. Make a slot along the top edge, ending at a 6mm hole drilled through the arm for the wire.

Step 9 The hole in the arm must be perpendicular, so I used the slot mortiser to drill it, then cut the slot along the edge of the arm with the table saw as before.

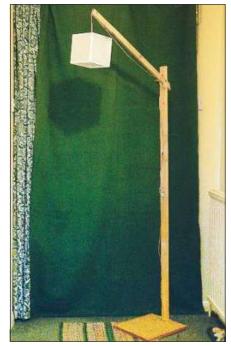


Masking tape marks show where to stop the cut

Step 10 The base is a 25mm-thick piece, 305mm square, which I made by gluing up three narrow boards (C&D). Shape with a straight cutter in the router, its bearing following a template attached to the base with double-sided tape.

Step 11 The pole attaches to the base with a mortise and tenon. The wire passes through the same mortise, so you need an extra 6mm hole. Using the slot mortiser, I cut a mortise to match the tenon cut earlier on the bottom of the pole. The corners of the tenon were then removed with a sharp chisel, so it fitted the mortise.

Step 12 The wire passes through a slot under the base towards the front of the lamp. It too was cut on the table saw,



The adjustable version that Peter made in pine to find the best angle



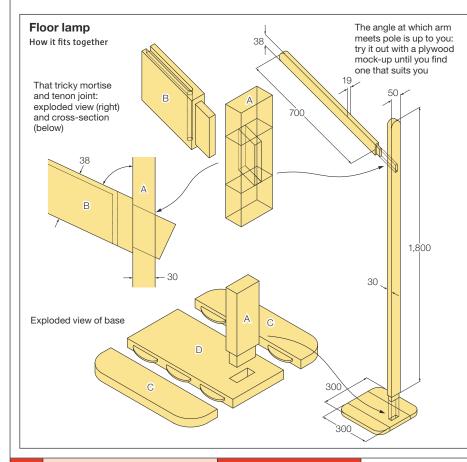
A cover cleverly hides the switch

ending up with a slot  $5 \times 5$ mm from mortise to front edge.

Step 13 Sand everything down to 240 grit, then apply three coats of Danish oil.

Step 14 During assembly it's important to put the wire through the base mortise while slotting the vertical pole into the base. Glue the tenon and wedge it from underneath to be sure of a solid joint. The top/arm joint do not seem to need this.

Step 15 The electrics comprise a plug at one end of the wire, a bulb-holder and shade at the top end, and the push-button switch recessed into the pole. For the switch, I removed a short piece of white plastic, cut the Live wire (brown) and connected the cut ends to the switch terminals. The Neutral (blue) continues unbroken beneath the body of the switch. This is held in place by the oak cover plate, attached with two No.4 × 12mm woodscrews in the carefully pre-threaded holes. If you are unsure about any of the electrics used, ask a qualified electrician to help.





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# Dark secrets

### Stephen Simmons reveals the techniques that underlie the smooth surface of ebonised wood

et's start the easy way with a history lesson. Ebony became available in commercial quantities in Europe in the early 17th century and its subsequent popularity was partly due to its exotic origins in tropical Africa and Asia, and also to the fact that its colour was so very different from any native European timber. Ebony is not always black, but it was the blackness that was valued. Its physical properties also made it attractive: it is resistant to decay in the damp conditions of north-west Europe; it is largely immune to shrinkage and warping (which made it ideal for mirror frames that were just

becoming popular at the time); and its tight grain also makes it very smooth and allows it to take a deep and lustrous polish.

The disadvantage of ebony, however, was that it was expensive and difficult to work. It therefore became associated with the highest quality work and skill - which is why French cabinetmakers are still known as ébénistes. To overcome the problem of expense, furniture-makers began to experiment with stains and polishes to make our cheaper native woods resemble the real thing. Hence ebonising, which can be regarded either as up-market fakery or environmentally sound timber stewardship!

### **Substitution**

Ebony's close grain meant that substitute timbers had to be of a similar texture. Pearwood was often used for the handles of Georgian silver tea and coffees pots, and by the 19th century, beech, sycamore and other fruitwoods were all being ebonised for larger pieces of furniture. I've also come across ebonised mahogany, but I wouldn't recommend it as its opengrain takes a lot of filling. Contemporary treatises abounded with recipes for creating the colour, using raw materials that ranged from acids to lamp black. Some of these ingredients are either no longer generally

available, or are downright dangerous to use, but the need for a close-grained timber remains constant.

#### **Ebonising**

Rather than repairing damage to an existing finish, I'll explain the ebonising process by starting from scratch with a new piece of wood as it will illustrate the basic principles better. Beech and sycamore are probably the best woods to use, but merely staining them black is not sufficient. There are three essential requirements. First, the grain must be filled and any figuring obscured completely - the finished product must simply be smooth, black and shiny. For many Victorian pieces this pure blackness was designed to emphasise their overall shape and line.

Second, the finish must be black rather than a very dark grey or brown. It is a common misconception that there is only one black, but there is an enormous variety, and a blue-black rather than red-black is essential. In Liberon's earth pigments range, for example, this would mean using the 'Vegetable Black'.

Thirdly, your final product will only be as good as your preparation. The blacker and shinier the finish, the more obvious any inadequacies will be, such as tool marks or abrasions against the grain.

#### Belt-and-braces

I favour the belt-and-braces approach, using a combination of water-based concentrates to colour the wood itself, and earth pigments as well as spirit-based concentrates to colour the shellac (French polish), which used to build the smooth finish that's essential to ebonising.

The first step is to ensure that the surface is perfectly smooth and grease-free and then to stabilise it. Do this by wetting it with water to raise the grain then, when dry,

cutting it back with a 240 grit abrasive; repeat the process until the surface remains smooth when wet. Let it dry thoroughly.

The next step is to apply a black waterbased concentrate with a soft brush. Leave this to dry again, and then

seal it in with three or four rubbers of dilute shellac. This will give a good basic blackness, but the figuring in the wood may still be evident and will need to be obscured. You can buy proprietary black shellac or make your own by adding a spirit-soluble concentrate to button or garnet polish, but even with multiple coats they are not sufficiently opaque to obscure the figuring. And this is where the earth pigment comes in...

Mix the pigment into the shellac and brush it evenly over the surface with a soft polisher's mop. The mixture has two properties: it is completely opaque, and as the pigment is insoluble in the shellac, it will also help to fill the grain. Let it cure overnight and then rub down gently with '0000' grade wire wool, taking care not to cut through. At this stage it will look grey and powdery but don't worry - the deep smooth blackness is about to return permanently.

The fourth stage involves building up

### TOP TIP

Keep the brushes and French polish rubbers that you use for ebonising separate from other tools, and don't use them for anything else. The black lingers horribly and will contaminate any other colour or shellac

'Vegetable Black' earth pigment from the



EARTH PIGMENT

the polish and filling any remaining open grain in the normal way of hand French polishing but with one difference: the shellac is blackened with a concentrated stain, as above, and its use will add to the deep lustre. The shellac will need ample time to cure, after which it will need to be cut back two or three times, so allow yourself a couple of days for this work. This may all sound rather laborious, but it's essential that you put in the work if you want to achieve a quality finish and with ebonising, the finish is everything and will come under close scrutiny.

### Repairing ebonised finishes

Patching damaged ebonising can be fiddly, but the same raw materials are used and the same principles apply. Don't necessarily aim for perfection, though: if other parts of the piece show signs of wear, then allow some of the wood to grin through the black a little on the high spots, edges and corners so that it all blends in and doesn't shout, "newly restored!"

Let's end with a restoration conundrum. The Victorian middle classes were slaves to fashion: not only did they destroy a lot of good 18th-century wax and oil finishes with French polishing, they also covered other original finishes with their mania for home ebonising. So, what do you do? Repair the damaged ebonising or remove it all to reveal the original finish? WW



Liberon's chart showing the various colours in the earth pigments range

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**BY COLIN SIMPSON** 

### **Back to basics bowl**

Colin Simpson talks bowl gouge techniques, shows you how to turn a simple shallow bowl in wet walnut as well as teaching you some new skills

his month I am taking you back to basics by explaining some bowl gouge techniques and I will introduce a technique called wet sanding. I am going to turn a simple 356mm diameter shallow bowl in wet walnut, but first a word of warning. Walnut contains a lot of tannic acid; this reacts with steel and can turn your tools and parts of your lathe black. It can also cause metal corrosion so don't leave the wet shavings lying about on your lathe, even over a coffee break.

### **Getting started**

Start by chainsawing a butt into slabs and then cut a disc on the bandsaw, **photo 1**. Find the centre of what will become the top of the bowl and screw on a faceplate, **photo 2**. Check the toolrest is secure, rotate

the blank by hand to make sure it revolves freely and check the lathe's speed. Start by turning this piece at around 500rpm as it will be out of balance. Start by truing up the edge with a swept-back bowl gouge, photo 3, using the tip of the tool with the flute about half open, keeping the handle lower than the cutting tip. Keep the pressure down on the toolrest but don't push the tool into the wood. Slowly slide the tool along the toolrest and just take off the high points on the edge of the blank. Try not to alter the angle of the handle as you move the tool along the toolrest. If you feel the tool banging on the high points as the blank revolves, then you are pushing too hard into the wood. Repeat this cut as many times as necessary to bring the blank into round. This cut is known as a push cut.

### TURNING Bowl basics



Cut the disc from the slab on the bandsaw



Decide which surface is to be the top and screw on the faceplate



Use a push cut to true up the edge...



... and a pull cut to flatten the bottom



The tip of the gouge is used to start cutting the spigot



Use the point of the skew to cut a pop mark in the centre of the spigot

### Gently does it

Next, flatten the base using the same gouge but this time using a pull cut, photo 4. Place the tool on the toolrest on its side with the flute facing the wood. The bottom wing does the cutting - it's really a scrape. Start at the centre and pull the tool towards you, moving it towards the edge of the blank. Again, don't push hard into the wood, but keep the pressure down on the toolrest. Photo 5 shows the same pull cut from a different angle and shows where the shaving should come off the tool. Here, I started the cut using the tip of the tool to cut in to start making my chucking spigot. When I had cut in about 2mm, I transferred the cut to the bottom wing to complete a pull cut. Repeat this cut until the spigot is about 6mm deep and the bottom flat. It is a good idea to make a small pop mark in the very centre of your spigot as this will help centre the bowl later. Do this with the corner of a skew chisel, photo 6.

### **Shaping cuts**

The next step is to shape the outside of the bowl. This can be done entirely with pull cuts, using the bottom wing of the gouge to cut, or using push cuts, or using a combination of both. The push cut, photo 7, is a bevel supported cut and so should give you a cleaner surface. I cut the outside of my bowl to an ogee or 'S' shape. To create a curve with a bevel supported cut, you must swing the handle of the tool. So in photo 7, I started the cut at the chucking spigot and as I slid the tool along the toolrest, I slowly pushed the handle away from me to cut the convex curve and then slowly swung the handle back towards me to finish the 'S' shape. Continue these cuts until you are happy with the outside shape. I decided I wanted a small foot on my bowl, and I cut this and shaped it using a skew chisel on its side as a scraper, photo 8.

There was a piece of rippled figure on the walnut, which can look nice, but resulted in



Shape the bottom of the bowl using both push and pull cuts



Cut a decorative bead on the foot with the skew chisel



a lot of torn grain, photo 9. This can be cleaned up using a series of finishing cuts, with the same bowl gouge. These can either be bevel supported cuts or shear scrapes, such as the cut shown in photo 10. In both cases, the handle is lowered until the cutting edge is about 45° to the surface of the wood. To shear scrape, put the bevel onto the wood and then roll the tool gently until just the cutting edge is touching the wood. Take light, gentle cuts and aim to achieve very fine spiral shavings, photo 11, remembering to keep the handle low so the cutting edge stays at 45° to the wood. Photo 12 shows the same area on the back of the bowl after a couple of finishing cuts.

### Wet sanding

Normal sanding on wet wood will very quickly clog the abrasive so it is worth wet sanding wet wood. This method has several advantages: firstly, the surface of the wood remains wet and does not dry out due to heat generated by friction and secondly, it does not create dust. Instead the dust becomes a slurry on the abrasive that can easily be washed off. You can wet sand with oil, but in this case, I used water. Be careful with water and remember that water and electricity do not go well together, so keep anything wet away from the electrical parts of the lathe. Reduce the speed of the lathe to avoid water spraying everywhere. Wet the surface you want to sand and the abrasive and hand sand in the normal manner, between 6 o'clock and 9 o'clock, photo 13. Photo 14 shows the slurry produced. Wash this off regularly in the water bath and continue to sand down through the grits until you are happy with the surface finish.

### **Reverse turning**

Reverse the bowl onto the chucking spigot, photo 15. Note here that the top surface of the chuck jaws are sitting tight up against the bottom of the bowl; this gives the strongest hold. Do not be tempted to make



Try to achieve fine spiral shavings...



Wet sand down to 400 grit...



The bottom of the bowl should sit on top of the jaws



Fine finishing cuts should resolve the problem



... which will help you to achieve a much better finish



... but keep washing the abrasive regularly to remove the slurry



This gap allows the bowl to move, creating a weaker hold

### TURNING Bowl basics



Shear cut the rim...



... and cut the rest of the rim with a push cut



Start the hollowing with the tool over on its side



Swing the handle towards you and roll the tool up as it cuts down to the centre



A series of grooves can help prevent the gouge from skating



Continue hollowing, going a little wider and deeper each time



Cut a decorative bead on the rim.....



 $\dots$  before completing the hollowing

the spigot too deep so that it bottoms out on the jaws, creating a gap between the top surface of the jaws and the bottom of the bowl, **photo 16**. The bowl could move in the chuck and split the spigot.

Flatten the top of the bowl using a pull cut, as shown in photo 4. I would normally start hollowing the bowl at this stage but, because it is wet wood and I intend to turn the piece to a finish, I need to turn it reasonably thin to prevent it from splitting. If I hollowed the bowl to its finished thickness - about 5mm - there would not be enough strength in it to allow me to work on the rim. At best the wood would flex under the tool and at worst, the bowl could explode. So, with the bowl still solid in the middle, now is the time to work on the rim. Use a shear cut, **photo 17**, to shape the outer part of the rim and a push cut, photo 18, to round over the inner part. Now you can start the hollowing.

### Hollowing

Place the gouge on the toolrest so the flute is pointing to 3 o'clock with the handle well over the bed bars. Use the tip of the tool to create a groove about 4mm from the centre, photo 19. Next, swing the handle towards you at the same as pushing the cutting edge down the side wall and across the bottom of the bowl towards the centre. This action should be done at the same time as rotating the tool anti-clockwise until the flute is pointing to about 1:30, photo 20. Continue this cut, each time going a little wider and a little deeper. The most difficult part of this cut is the initial entry because you must enter the wood with the cutting edge and there is a danger that the tool will skate across the surface of the timber. You can help prevent this from happening by making a series of grooves in the wood using a parting tool or skew chisel, photo 21. The tip of the bowl gouge can then nestle in these grooves and so prevent the tool from skating, photo 22. Before you complete the hollowing and before the bowl gets too thin, cut a bead to delineate the rim, using a skew chisel held on its side, photo 23. Now finish hollowing trying to achieve an even wall thickness of about 5-6mm, photo 24. This should be thin enough to allow the bowl to move without splitting as it dries out. With practice you should be able to achieve an acceptable finish straight from the gouge, but you can use a round-nosed scraper to tidy up the inside if necessary, photo 25. I like to hold scrapers further down the handle with the rest of the handle tucked under my forearm, photo 26; this helps counteract the pivotal force that comes from the cutting edge overhanging the toolrest.





For greater stability, tuck the handle under your forearm



Reverse chuck the piece onto a dolly and a soft piece of leather

### Final touches

Wet sand the inside of the bowl down to 400 grit, then remove it from the chuck. To remove the chucking spigot, use a mushroom-shaped dolly held in your chuck with a piece of thin leather sandwiched between this and the inside of the bowl, photo 27. Bring the tailstock up to the pop mark in the centre of the chucking spigot; this will keep the piece pushed up against the leather and dolly. This method of holding the piece allows you access to the chucking spigot and base, photo 28. Use a 10mm spindle gouge to remove the spigot and slightly dish or concave the base, leaving just a small stub for the revolving centre. This needs to be removed off the lathe with a sharp chisel, photo 29.

Finally, let the surface of the bowl dry and give it a light sanding with 600 grit abrasive by hand going with the grain.

This should remove any raised grain.

The piece will still be wet and you should expect it to move a little, but you want to slow the drying process down, so give the piece a liberal coat of boiled linseed oil and wipe of any excess after about 10 minutes. Keep the piece in a cool part of your workshop for a month or two so it doesn't dry out too quickly and then give it several more coats of oil.



Bring the tailstock up to the pop mark and remove the spigot



The stub can be cut away with a sharp chisel



The completed bowl with its proud owner!

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# Flat and square

Cheaper, quieter and very satisfying, too: preparing timber by hand needn't be slow or difficult, says Mike Riley

he most important part of any project is probably the initial stock preparation: without proper preparation no other part of the project can happen, it's as simple as that. When it comes to preparation you have three options: buy PAR timber, which is relatively expensive;

buy rough sawn timber and process it using machines; or break out the hand planes and do it yourself. My preference is for the latter because it's cheaper, safer and quieter. It's also not as slow as you might imagine, and when you've had a bit of practice, it's not that difficult either.

### Tools for the job

It's not inconceivable that the entire process of stock preparation could be carried out using tools that you've made yourself, and there was a time when this would have been the case. I actually use a combination of homemade and bought-in tools, which



Back to basics: the whole process of stock preparation can be carried out using hand tools



Grit or silica embedded in the timber will damage the sole of a plane



With a planing stop, you can rely on the downward force of the plane to hold the board in place

include a selection of bench planes with sharp irons. Generally, I use four planes to take a board from rough sawn to finished: a wooden scrub, a 559mm-long jointer, a jack plane with an adjustable mouth, and a wooden smoother, photo 1. I also have an old wooden fore plane. I use a lot of recycled wood, and the fore plane is good for giving the boards a quick clean up to remove any grit or silica, photo 2, that might be embedded in the surface before it has the chance to destroy the sole of my jointer or smoother. This is a lesson I've learned the hard way. In my opinion, the first three of these planes are essential for stock preparation, though there is a certain amount of interchangeability: depending on the size of the workpiece and the amount of effort that you're prepared to expend, you could do the whole job with the jack plane.

You'll also need a straightedge and a pair of winding sticks. I tend to cheat here and use the body of my jointer plane as a straightedge or in combination with my jack plane to form a pair of winding sticks. This will only work if the sides of your planes are straight and at right-angles to their soles. If yours aren't, then a pair of winding sticks is easy and cheap to make. Alternatively, there's plenty of machined winding sticks available to buy.

The final ingredient is a sturdy bench. It's important that the bench surface is flat, of course, as you'll be using it to prepare a reference surface.

### The aim of the exercise

...is to end up with a piece of timber that's flat and straight on six sides, in length, width and diagonally, whose faces are co-planar or perpendicular to each other, and which is of the required dimensions. As you can imagine, it's a process that needs to be tackled in a methodical fashion if you're not to introduce problems that will come back to haunt you later.

To begin, then, you need to prevent the workpiece from rocking or flexing, so decide which side of the board will be the



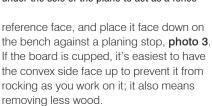
Check for twist with your winding sticks. If all's well, the top edges of each stick will be parallel...



...unfortunately, it's more likely that the sticks will indicate some amount of twist



Successful edging: I hold the front of the plane body with my left hand, curling my fingers under the sole of the plane to act as a fence



You now need to remove the high spots from the board so that it no longer rocks when placed face down. This means looking at the board, looking for light between it and your straightedge, planing away the high spots, and regularly testing the board for stability.

If the board rocks when you turn it over, try placing your fingers at diagonally opposite corners and moving them towards one another while rocking the board. When the board stops tipping, the high spot will be between your fingers. Another method is



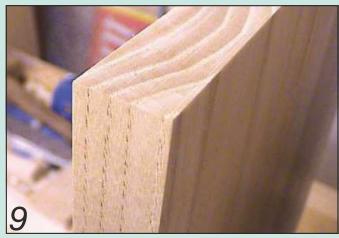
You've heard it before, but mark prepared surfaces to indicate that they're reference faces and edges

to rub the face of the board on the bench top, which will burnish the high spots and make them easier to see. There is no shortcut to this unfortunately; the board must be made to lie still before moving on, or we won't be able to make the opposite side flat when we prepare it as the face side, and it'll be no use as a reference face.

When you're ready to start preparing what will become the face side, fix the board to the bench top firmly enough to stop it moving, but not so firmly that it's deformed by clamping. I use a planing stop and rely on the downward force of the plane to hold the board in place. Again, the aim is to remove any bumps that may be present, and the quickest and easiest way to do this is with the jack plane, usually skewed across the grain to bring any high spots



A shute, or shooting board, and a fiendishly sharp plane iron...



... are essential for preparing the ends of a board



Use a scrub plane diagonally across the board to take down almost to the required thickness...



...leaving this distinctive scalloped surface



Flat, square, and not a power tool in sight!

down to a uniform level. You could also use a scrub plane, though there's a danger of removing too much wood through overenthusiastic scrubbing.

Once the worst of the bumps have been removed, put the scrub or jack plane aside and reach for the jointer. The longer sole of this plane won't follow the contours of the board in the way that the jack plane does, and so is more effective at knocking off the high points. Listen to the plane and hear the change in sound as the jointer starts to take longer shavings as the board gets flatter.

When you're able to take full-length shavings with the jointer, check that the board is flat. You should be continually checking for light under a straightedge when held against the surface, both across the board at various points and along its length. This is why I use my plane as a straightedge, because moving from planing to laying the plane on edge is easy to do.

### Checking for wind

You also need to check for wind, or twist, photo 4, with your winding sticks by laying them across the face parallel to each other and perpendicular to the board. If all's well, the top edges of each stick will be parallel

to one another as you sight along the board. Unfortunately, it's more likely that the sticks will indicate some amount of twist, photo 5, which is removed by planing diagonally across the board from high corner to high corner, checking all the while that you don't remove too much wood. Once done, the face will be flat in all axes. At this point, you might like to take a few final passes over the surface with a fine-set smoother, though if the board is an internal element in a construction, this smoothing might be a step too far. Either way, you should now mark the surface with a face mark to indicate that it's a reference face.

### **Edging the board**

The next step is to prepare one edge of the board so that it is flat and straight and at right-angles to the face side you've just prepared. This will become our face edge, another reference surface. Again, start by fixing the board to the bench. I clamp the board in my shoulder vice so that it is held firmly to the front side of the bench.

The jointer plane is the tool for preparing the edge, as its length allows it to ride over any valleys in the board's length. Some more experienced practitioners advocate

preparing the edge of a board with a curved iron. I might try it one day, but for now I get perfectly good results with a straight iron.

My approach is to check the wood with a straightedge and identify what the high spots are; it's sometimes helpful to mark them with a pencil. After taking a couple of light passes over the edge to remove the pencil marks, I check the edge for squareness with a small engineer's square referencing off the face edge. I do this at several points along the length of the edge and again mark any areas that need attention with a pencil. I continue to take light shavings from the edge until the pencil marks are gone and I can take a full-width, full-length shaving, constantly checking for squareness and addressing any deviations as I go.

In my opinion, the secret of successful edging, I think, is partially in the grip and partially in keeping the plane body horizontal. You can tell whether it's horizontal by the tote, which should be upright not tilted. As for the grip, I hold the front of the plane body itself with my left hand, **photo 6**, with the thumb on top of the plane and central to the body, usually just in front of the knob. I curl my

fingers under the sole of the plane and keep them pressed to the face of the wood so that I'm pinching the plane sole and using them as a fence to keep the plane straight. Make sure your board is high enough in the vice to avoid driving your knuckles into it.

The best way to check for squareness of the edge to the face side, meanwhile, is to press the stock of a square tightly against the edge you're working on and look for light between the blade of the square and the face side at points along its length. There should be none, and when this is the case, you can mark the edge as your reference edge. Now that you have two well-prepared reference sides, you can use them to accurately measure and mark off the other four sides.

You now want to take the board to its desired final width and true up the second edge. With the fence of a panel gauge running against the reference edge, mark off the required width of the board, **photo 7**. Because of the care you've taken preparing the reference edge, this line will be both straight and parallel to the other edge. If there is a large amount of waste, saw it off, otherwise it's easy to plane away a small amount with a scrub plane. This kind of wasting is the kind of use for which the scrub plane was originally intended.

You can square and true this edge using the same methods you used on the first edge, continuing to take light shavings from the edge until you've just shaved away the gauged line.

When it comes to the ends of the board, you'll need a square, a shute board, and a plane. Now, there are different types of plane that can be used for this job; I tend

### SHAVINGS & OFFCUTS

#### Face side

The face side that becomes the reference face may not be a show surface in the finished piece. As it's a reference face, locate it where it will interact with other reference faces in a construction, on the inside

### Winding sticks

If poor eyesight makes it difficult to focus on both sticks at once, try making a small hole in a piece of paper and looking through it; the hole acts as an artificial iris and increases your depth of vision

### **GUIDING PRINCIPLES**

#### Use tools wisely...

Use the right tool for the job in cases where it makes a real difference to the work. For example, when planing, I work through a series of stages starting with rougher work, for which I rely on the jack or scrub planes, followed by the long jointer. The smoothing plane is reserved for giving the surface the final polish. This approach makes the work faster and easier, both in terms of achieving the required result and the amount of effort that you'll expend

### ...and develop a feel for them

You have to learn how these tools feel when they're working for you. This is a case of building up muscle memory through practice. I think that the modern requirement for instant gratification, for having everything now, is partly to blame for the prevalence of machinery in small workshops, as the machinery produces usable results without the requirement for us to commit time investment in practising hand skills

### Don't make work for yourself

This might seem an odd thing to say given that I am talking about preparing wood by hand, but don't do unnecessary work. Don't leave boards hugely over-length thinking that you can come back and cut them to length later. The dimensioning is part of the preparation

#### Don't make waste

Don't waste time using the scrub plane to reduce a board's thickness by half. Break out a frame saw or rip saw instead, and resaw the board into two pieces. Where once there were six sides now you have 12. Just think of all the hand tool practice you can get while making that flat and square!

to use my low-angle jack set for a very fine cut, and with its adjustable mouth closed right down. Another plane that could be used is the iron mitre plane, which is designed specifically for this purpose. Whichever plane you choose, the iron must be fiendishly sharp.

### Secret of the shute

There is little secret to using a shute board, photo 8. If the reference edge has been properly prepared and the board itself is true, the ends you'll produce will be flat, square and at right-angles to the edges, photo 9. It can be no other way. So, dress one end, then turn the board around and mark the precise length required with a square and sharp knife. Saw away the waste and trim to the line on the board, taking fine shavings until the scribed line evaporates in the last pass of the plane. It might also be useful to lightly chamfer the corner of the board that you're planing into so as to avoid break-out in the long grain of the edge against the stop. The alternative is to put a piece of scrap wood in the shute and let that break out instead, though there is a risk that the scrap wood may compromise the accuracy for which you're striving.

Your board now has five finished faces and is the correct width and length. All that remains is to bring the board to the final thickness and dress the remaining surface, which will most likely become the show surface.

The required thickness of the board is marked by pressing the fence of a cutting gauge against the face side and scribing a line around all four edges. With the board secured to the bench, waste away wood until you've reduced the thickness of the board almost to the gauge mark. I prefer to use a scrub plane for this, **photo 10**, as it's by far the fastest method.

I plane diagonally across the board in one direction and then back the other way. This method means that I am able to take a heavy cut without causing tear-out; the scalloped surface, **photo 11**, that the scrub plane leaves is a kind of controlled tear-out in itself. If the board is tearing out, increasing the angle of attack can help; some boards may need to be approached at up to 90° to the surface grain, **photo 12**.

Just before reaching the thickness mark, I swap to the jointer plane and take the board down as far as the marks around the edges, checking periodically with the edge of the plane that I'm keeping the surface flat, and stopping just as I reach the marks on the edge. If you do this evenly all around the board, you can be confident that the two sides will be parallel to each other, and that the face itself is flat.

Now move on to the final step of the process, which is to take very fine overlapping passes across the board with a smoothing plane. With care, it's possible to achieve a standard of finish with the smoothing plane that can't be bettered by abrasive.



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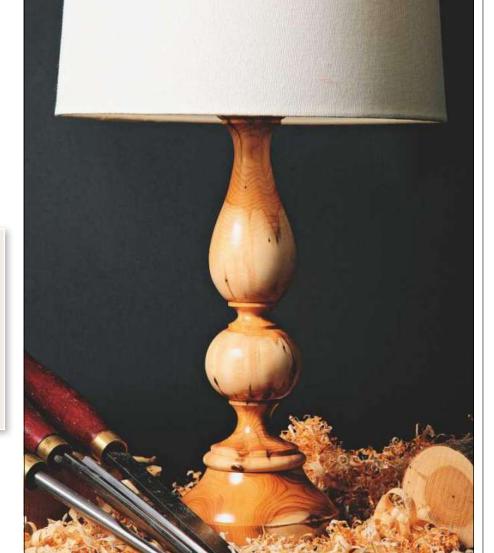






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### THE TOOLS YOU'LL NEED

- 20mm bowl gouge
- Parting tool
- 10mm spindle gouge
- Skew chisel
- Spindle roughing gouge

You'll also need a long hole boring kit to drill the hole for the lamp flex through the spindle



### Turning for beginners

### 6: Theory into practice

It's time to put into practice everything you've learned about the lathe, its tools and accessories, and the sort of timber to use. The best way of bringing all this together is to make a small project, and I've chosen a two-piece table lamp. It needs just five turning tools and the minimum of timber, but it does incorporate all the basic techniques you need to learn as a beginner

he timber I'm using is some yew - garden prunings from a couple of years ago. The spindle is turned from a branch about 65mm in diameter, while the 125mm base is cut from a larger blank. You really don't have to spend a fortune on expensive, exotic blanks when there is so much colour and figure in home-grown material, particularly when it is otherwise destined to be firewood. Now follow the step-by-step...

### TURNING Theory into practice





Use a soft-faced mallet to knock in the drive centre so the indentations on the wings penetrate deep enough to provide a positive drive



Mount the blank between centres, preferably using a revolving centre in the tailstock to minimise burning. Don't over-tighten everything



When you bring up the toolrest, spin the work round by hand a few times to check for clearance before switching on the lathe



Select the correct speed. Roughing out of a piece of this size is normally carried out at about 750rpm until it becomes properly balanced



Start the roughing out process using the 6mm gouge with the handle well down and pointing the flute in the way you want to travel



Rough out about half of the blank and then move the toolrest down to allow you to work off the other end of the workpiece



Stop occasionally and move the toolrest in closer to the work. The speed can probably now be increased to about 1,200rpm



Use a pair of callipers and the parting tool to form a 25mm diameter pin about 20mm long on the bottom end of the spindle



Slightly undercut the shoulder of the spindle to ensure that it sits down tight onto the base when the parts are assembled



Use the parting tool to mark all the main changes of detail. This gives you an idea of the finished proportions of the overall piece



Use the 10mm spindle gouge to round over the bottom bead. Roll it fully onto its side to get into the tight corner by the shoulder



Use the same tool for cutting the coves, this time rolling it onto its back as you make a cut downhill from either side



Clean up the top end using the skew chisel on its back edge to make a slicing cut down to the tailstock centre



Form the bigger sections of detail using the spindle roughing gouge. Keep the bevel rubbing so that you're cutting off clean shavings



Cut the deepest coves last to maintain the spindle strength. Make the shoulders the same width, although not necessarily the same diameter

# TURNING Theory into practice



Don't be afraid to remove plenty of material. You don't want to leave the finished design looking too thick and heavy



Use the long hole boring kit to drill the central hole for the flex down the length of the spindle. Clear the flutes regularly



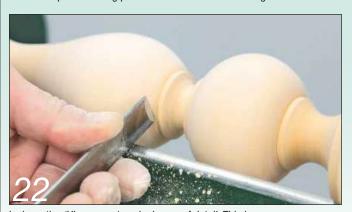
Use the counterbore tool (normally supplied as part of the long hole boring kit) to drill a recess for the lampholder fixing plate



Give the finished spindle a thorough sanding. Start with 240 grit abrasive and work down the grades to about 400 grit



Take care with the sanding so you don't round over the detail. Fold the abrasive paper into small pieces and work carefully into the recesses



Incise a tiny 'V' groove at each change of detail. This has the effect of sharpening up the angles quite dramatically



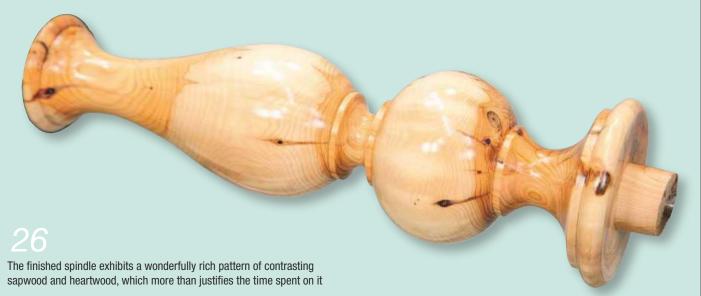
Apply a couple of coats of sanding sealer with a cloth with the lathe stationary. Rub it well in, particularly in the end-grain areas



Apply the polish of your choice. Paste wax applied with a cloth produces a wonderfully natural looking sheen, but will dull down a little over time



For a really high gloss, apply a light coat of carnauba wax on top of the paste wax and then buff this quite hard with a soft cloth





Hold the base blank for the base on the 63mm woodscrew chuck screwed into the top of the blank. Start turning at about 1,000rpm



Use a 10mm bowl gouge to trim up the periphery, again keeping the handle down so that the bevel cuts cleanly in a controlled manner



Use a parting tool to form the chucking recess and remove the waste. Make the recess slightly hollow, to allow the chuck to seat properly



To increase the dovetail grip of the chuck jaws, angle the inside of the recess back slightly using the skew chisel on its side



As this is the last time the underside of the base will be accessible, sand and polish it now in the same way as the spindle



Reverse the base onto the chuck, expanding the jaws into the recess. Rotate it slightly as you do, to make sure the jaws seat perfectly

# TURNING Theory into practice



Drill or turn a hole to take the dowel at the end of the spindle. Fit it and draw around the bottom bead to show how much you can turn away



Drill a 6mm hole from the least interesting edge of the blank into the central hole, to form the side entry for the lamp flex



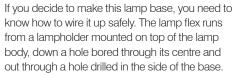
Shape the base profile with the 10mm bowl gouge. Swing the headstock off a few degrees to give clearance for the tool handle over the lathe bed



before. Keep the wax well away from the areas that are going to be glued together



# WIRING UP TABLE LAMPS



Lampholders for table lamps may be plastic or brass. Both are mounted on a small circular brass plate that is screwed to the top of the lamp body, and this must incorporate plastic protection bushes to stop the flex sheath from chafing on it.

In addition, the flex must pass through a plastic cord cleat to prevent a yank on the free flex from straining - or breaking - the connections at the lampholder terminals. You will need to create room for this cleat within the lamp body. The simplest solution is to bore a larger diameter hole up from the bottom of the base to the point where the hole through which the flex passes changes direction. Feed the flex down from the top of the lamp body, through the cleat and then out through the side exit hole.

Wire the lamp with round 0.5 or 0.75mm<sup>2</sup> flex. You can use two-core flex for lamps fitted with a plastic lampholder. If you prefer a brass lampholder, you must use three-core flex with an earth core, which is connected to the earth terminal on the lampholder and plug WW





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These two trade-rated sanders from Axminster are aimed at two different types of user but both machines are extremely effective in use

# **Axminster** SS-12VS & DS12DLMB2 300mm & 305mm disc sanders

# **Axminster** SS-12VS

While a disc sander may not be on the top of your list of machines, it is nonetheless an extremely useful tool to have. Combined with a bandsaw or jigsaw, it can be used to produce smooth curved components. It can accurately trim and shape end-grain and can also be used with care on metals and plastics.

This heavyweight machine has all the features a professional could need. It is extremely heavy and robust and as such, should be safely bolted down onto a stand or workbench. It has an unusual design as, instead of the table tilting to vary the angle at which the workpiece contacts the disc, the motor tilts and the table stays horizontal. The tilting mechanism uses a rack and pinion system to move the motor and there is a sprung pin to lock it in the most-used positions, so it is easy to set and reliably accurate.

The table itself is made from heavy cast-iron and has a groove in which the large mitre fence runs. It can be tilted away from the disc to allow the abrasive to be changed.

# **Extraction**

Disc sanders do generate a lot of dust, especially when you're shaping components. It is reassuring to know that there is a dust extraction outlet fitted to the base of the disc housing beneath the table and adaptors are supplied, so it can easily be connected to most extractors.

### **Disc**

The disc has a protective shield mounted over its right-hand quadrant; this is to dissuade the user from accidentally offering the workpiece to the 'upside' of the disc where it may be wrenched from their hands and flung across the workshop. Always work on the 'downside' of the disc so that the work is safely held down against the table.

## Changing abrasive

Unusually this sander uses hook-and-loop-backed discs, so it is quick and easy to change abrasives as necessary without having to clean off any sticky residue left by self-adhesive discs. The worktable tilts out of the way and the plastic shrouding around the disc must be removed before the abrasive can be changed, but this is quick and easy to do.

# Starting and stopping

The sander uses an induction motor, so it runs quietly. It is fitted with a variable-speed control, which is especially useful as the speed can be set to suit the job in hand and so avoid overheating or burning the timber as can easily happen. The disc spins freely and after the power is cut, it takes



SS-12VS power switch and variable speed knob



The SS-12VS's motor tilting mechanism



The SS-12VS's table with solid mitre fence



The SS-12VS has a substantial table



The SS-12VS's rack and pinion tilting



The push-button click-stop on the SS-12VS





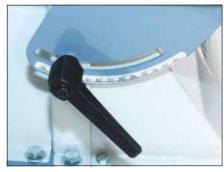


The DS12DLMB2 features an NVR shrouded switch with extra cable





The SS-12VS uses a hook-and-loop disc



The DS12DLMB2's simple tilting mechanism



The SS-12VS in use



The DS12DLMB2 features a huge table

# **Axminster** DS12DLMB2

The second sander here has a rather more conventional design, though with a couple of surprises. Again, it is bench-mounted machine and should be safely secured before use. The disc remains vertical and the table tilts on this machine; however, it has an unusually large table. The machine is also equipped with electronic braking and a removable power switch.

### **Table**

The table is a massive 400mm long and 225mm wide and features a large curved extension, which gives excellent support for large workpieces. There are two grooves cut in to accommodate the small mitre fence and the table sits on a pair of quadrant brackets, which move to allow the table to be tilted to the required angle. A scale is marked on them, but there are no click-stops and they are secured with Bristol levers. Beneath the table is a 63mm diameter dust extraction outlet.

### Disc

A protective shield is also mounted on this sander over the right-hand quadrant, and the base of the disc is covered by the extraction housing. The abrasive used is the more common self-adhesive type, which is easy to change after removing the table and the lower housing.

### **Switch**

A standard NVR switch is used to feed power to the induction motor and it is mounted at the back of the machine. However, it is fitted with an extra long length of cable between it and the motor, so it can be removed and mounted in a more convenient position, perhaps on the front of a bench or stand. There is no variable-speed, but it is equipped with electronic braking, which stops the spinning disc rapidly.

### In use

The DS12DLMB2 is a simple machine to use. Care must be taken to set angles accurately and the use of a try square or sliding bevel is recommended. The motor runs smoothly and stops rapidly, making this a particularly safe machine to use. The dust extraction is also efficient.

SPECIFICATION		
	DS12DLMB2	SS-12VS
DISC SIZE	300mm	305mm
POWER	560W	750W
SPEED	1,425rpm	1,000-3,000rpm
TABLE TILT	45°	-5° to +45°
WEIGHT	28ka	32ka

### **VERDICT**

Both these sanders are good machines with their own strengths. The SS-12VS is especially good for precise work with its clever tilting system, variable-speed and quick set-up. The DS12DLMB2 offers a generous worktable and electronically braked motor, making it particularly safe

PROS ■ SS-12VS: Variable-speed; accurate tilting system; hook-and-loop abrasive fastening

■ DS12DLMB2: Large worktable; electronic braking; removable power switch

**CONS** ■ **SS-12VS:** Very heavy; manual disc brake

■ DS12DLMB2: No variable-speed; tricky to set

VALUE FOR MONEY PERFORMANCE



# **FURTHER INFORMATION**

- Axminster Tools & Machinery
- □ 03332 406 406
- www.axminster.co.uk

## Summing up

Both these machines are extremely effective. They are aimed at two different types of user: the SS-12VS is really for the professional user who demands extreme accuracy, versatility and ease of setup and it fulfils all these requirements admirably; whereas the DS12DLMB2 places more emphasis on simplicity and safety. It is the ideal machine for use in an educational environment. **AS** 



The DS12DLMB2 has a small mitre fence



The DS12DLMB2 with its table tilted



The DS12DLMB2 in use

This new radically redesigned pocket-hole jig from Kreg gets five stars from us and is ideal when working with different thicknesses

# Kreg K5 Pocket-Hole Jig

The K5 is a radical redesign of its predecessor, making it even more userfriendly. Its footprint is bigger but clamping is now via the front side with a large paddle working in a cam-like fashion, hinged below the base to pull the clamping foot inwards to secure the work. Two side extensions support wider boards as well as offering

flip-up lids for storing the drill bit, side stop and depth setting block for the drill

> and a few screws. These extensions slot in with a dovetailed fitment and for a permanent set-up there are appropriate fixing

holes on the jig and the extensions.

The jig bushing block is now held with a

spring-loaded pin rather than the threaded

pin of the K4 so there's no danger of losing

it. The clamping shoe slides on a ratcheting plate into notches that snug it up close to the workpiece when the clamping lever is engaged. Pushing on the large grey button releases the shoe from the plate so it can be slid back for thicker work. It's a brilliant improvement over the K4 and you can now swap in a flash between any thickness from 12-38mm.

Instead of a slot for setting the drill collar there's now a stepped block. It works well enough, and helps eliminate mis-setting of the drill to the corresponding timber, but I still like the moulded-in version on the K4.

The high-quality drill has sharp flutes along its length for very clean holes and fast drilling, and with the dust port now a built in swivelling outlet, clogging is reduced.

# Summing up

The K4 is great but the K5's fast adjusting capability makes life so much easier when working with different thicknesses. AK

# **SPECIFICATION**

MIN TIMBER THICKNESS MAX TIMBER THICKNESS 12mm 38mm In use

**ACCESSORIES** Kreg Jig K5 base with ratcheting front-side clamp, extension wings, swivelling dust-collection port, drill guide block, spacer block, workpiece stop, drill bit setup block, stepped drill bit, 152mm driver bit, stop collar, Allen wrench, Hex wrench, starter Kreg screw set, starter pocket-hole plug pack, online SkillBuilder videos, and three downloadable project plans

£99.95

# **VERDICT**

The K5 is a vast improvement on the previous K4 model and is well worth the money

- **PROS** Fast adjustments
  - Storage containers for bits
  - Support for wider work

**CONS** ■ Drill has to be set with a block

VALUE FOR MONEY **PERFORMANCE** 



# **FURTHER INFORMATION**

■ Kreq

www.kregtool.eu



This large cam lever locks the work firmly in position



The spring-loaded indexing pin is used alongside the height scale on the side that relates to timber thickness



The lever is linked to this ratcheting shoe, making it easy to alter settings



Once the guide block is at the right height, the drill can be set up with the stop collar



# **Stanley FatMax** 18V drill and impact driver

It must be comforting for manufacturers to know that they're on the right lines, and what better way than to look around and see that everyone else is selling a similar product or successfully packaging a particular selection for a specific market. Such a pair of products is the popular combination of 18V cordless drill and accompanying impact driver. The latest brace on the market is this one from long established tool makers Stanley, and comprises a compact combination drill (aka a 'combi') plus a dedicated impact driver. The last few years have seen a rise in popularity of their trade and high-end DIY targeted 'FatMax' brand, which can be found online and at Argos and Homebase across the UK. Power tools are a newish venture for Stanley, but, backed by their well deserved reputation, all seems to be going well for them and the latest yellow-bodied kit.

# All bagged up

The two tools are currently being presented as a working pair, and come in a modestly-sized nylon shoulder bag. This has ample room for both drill and driver, plus charger and batteries, too. Side pockets, pouches and clips mean you can get pretty much all you need for a simple DIY task onboard, and that's just what I did last weekend for a couple of little jobs round a friend's house. Although a sturdy plastic carry case stacks up nicely in the van and you can sit or stand on it, there's a lot to be said for the convenience and 'hands-free' aspect of a shoulder bag. This one even has a little plastic window for your business cards!

The kit is supplied with two Li-ion batteries rated at 2Ah each. I think we've been getting a bit spoiled with increasingly bigger batteries of late; unless you're using your drill pretty much constantly all day long, these are perfectly OK and also have the advantage of being half the size

(and weight) of the 3, 4 and above Ah versions. If you're only an occasional user, you can check battery condition before you start work with the base-mounted indicator device.

### Combi drill

The combi drill is nicely sized and proportioned, and all who've held it have remarked on its comfort. The smaller battery helps to keep the weight down, yet it still manages to feel like a 'proper' power tool. All the controls are where you would expect them – it would take a brave manufacturer to ignore today's evolved convention – and everything works just how you would expect. The standard keyless chuck is easy to grip and doesn't make you fear for your fingers every time you change a drill bit. In use it performed faultlessly, although I was mildly surprised to note the chuck's



Fast charger and compact 2.0Ah battery



Chuck to chuck; keyless versus Hex



The onboard digital battery checker

forward spring action; I don't know if this is a shock-absorbing device or if it's something to do with increasing accuracy? If anyone out there has the answer, I'd be pleased to learn it.

I have to take my hat off to the designers of this drill and driver duo, as they've managed to stop just short of making the kit look gimmicky while retaining the appearance of a piece of kit your average builder wouldn't be embarrassed to be seen using. Everyone who saw it liked it, and the girls from the studio next door all wanted to keep it. A hit all round it seems...

### In use

I had a few fixings to make in a couple of different walls recently, so I took the drills in their Stanley holdall and trusted to the benevolence of the gods of DIY. The first wall was brick and looked easy. I like to start without the hammer action, only clicking it on when it feels like hard work – hard work for me that is. A couple of 5.5mm holes later (it makes for a tighter fit with your 6mm plugs if the wall is a bit soft) and then it was onto the poured concrete of the park-side flat. These holes proved to be more of a challenge, but at no point did it feel like a waste of time – the drill did its work and all was well.

### Make an impact

When they first came out, impact drivers were a bit of a puzzling oddity. The constant rat-a-tat-tat of the impact device certainly drove a screw in more guickly and with a lower user muscle requirement, but you really needed some ear defenders to stop from going mad (I'm only speaking for myself here by the way). Things have lately improved, so much so that the FMC645 impact was almost enjoyable to use, the 'impact' only really kicking in when it was absolutely necessary to supplement the torque provided. Having an impact driver at your disposal means you can do away with pilot holes, even clearance holes for big screws, and really speeds up a job. I used mine to fix some cupboard backs on – no clearance holes – and pretty much reduced the time it would normally take by at least half, but likely more.

# Summing up

Unlike the combi, there is no adjustable torque control, so the user needs to be prepared; I found that while it was quick and efficient, I missed the feel of the feedback that you get with a regular driver. I did find myself warming to it after a bit, though, and for certain jobs in the future, it could easily become my power tool of choice. MC

> grip makes for increased comfort

# **SPECIFICATION**

COMBI DRILL

SPEED	0-400/0-1,600rpm
MAX TORQUE	51.4Nm
CHUCK CAPACITY	13mm

### IMPACT DRIVER

SPEED	0-2,900rpm
BEATS	0-3,100bpm
MAX TORQUE	180Nm
CHUCK CAPACITY	6mm (Hex)
WEIGHT	1.2 kg

## **VERDICT**

The combi drill is an absolute winner no question; the impact driver is a good specimen of the type, but will be something of an acquired taste for most users

- **PROS** Compact
  - Efficient
  - Light and comfortable to use

**CONS** ■ A regular driver instead of an impact would have made this my power tool kit of the year

VALUE FOR MONEY **PERFORMANCE** 



# **FURTHER INFORMATION**

- Stanley Tools
- **□** 01753 511 234
- www.stanleytools.co.uk

The nifty 'hands-free' shoulder bag





Torque selector ring and speed switch





Detail of body moulding design

These Trend kits, while not designed for impact work, offer a great range of applications

# Snappy SB3 & SB4 screwdriver sets



**SPECIFICATION** 

SB3 SET 48 bits × 25mm; 7 bits × 75mm **SB4 SET**  $12 \times 25$ mm (6.3mm hex fitting); 18 × mini (4mm hex fitting);  $5 \times \text{splined sockets} - 6, 7, 8,$ 01 & 13mm

## **VERDICT**

Great kits to use if you're working on a wide range of applications and they're of very good quality

PROS ■ Each set has an excellent range

- SB4 is ideal for controlled smaller work
- **CONS** Be careful not to overload the SB4 driver on bigger fixings or
  - Magnetic holder has no power on longer bits

**VALUE FOR MONEY PERFORMANCE** 



# **FURTHER INFORMATION**

- **■** 01923 249 911
- www.trend-uk.com

If you already own a battery driver, the SB3 kit is the more comprehensive in the fixings that can be used, with 48 25mm-long bits covering Philips, Pozi, slotted, hex, Torx

and Torx security plus seven

75mm-long bits covering the three common Pozi and Philips sizes along with a single slotted bit. Each bit has a coloured identifier ring, and all are of good quality, as is the magnetic bit holder.

This has a pullback sleeve that locks each bit in place, but while the magnetism within is good on the 25mm bits to help hold

a fixing, I found it has no hold when the 75mm bits are in use. Nonetheless, there's a decent set of good-quality bits within this set in a compact little case if that is all you need.

From £32.28

However, the SB4 is the more interesting of the two and gives more scope, especially if you

want the closer control that hand driving offers. It's a 41-piece set and has a small <sup>1</sup>/<sub>4</sub>in drive ratchet handle for the five sockets as well as a natty little ratchet handle for the screwdriving tasks, which can be used in its own right for additional purchase on stubborn fixings or for an extra nip up as required.

There's an adaptor included so the sockets can be used, but the advice is to go no bigger than the 10mm socket.

## **Further sets**

With a decent set of commonly used bits in various sizes, again with coloured collars for easy identification, it's the inclusion of a further set of micro-sized bits that could prove useful for some repair work, on small electrical items especially.

A neat dual-function bit holder is included



...but with the longer bits there's no magnetism at all through the bit

for these as they have a smaller 4mm hex shank so the bit holder has a retracting sleeve that reveals a 4mm holder in one position and a standard 6.3mm holder in the other.

## Summing up

The overall quality is again very good indeed,

and used within its capabilities this is a kit that is especially useful for small assembly work where finer control is needed while still attaining decent torque on the fixings. AK



With the black sleeve forwards the standard 6.3mm hex bits are held



The SB3 bit

works well

holder magnet

enough with a

short bit fitted...

Slide it back and it holds the micro 4mm hex bits



The SB4 ratchet handle can hold the bits directly for working in tight areas



Alternatively, it will take the magnetic bit holder to extend it



You can also fit the sockets using the adaptor



For general nut and bolt securing the ratchet handle is good

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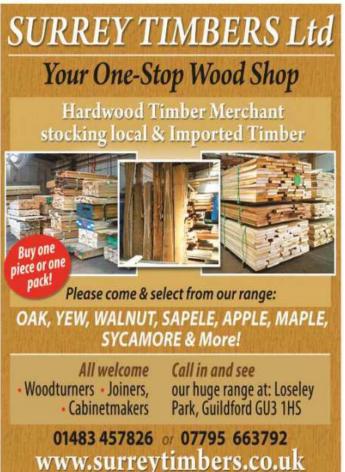
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Stanley No.5 'before & after' photo courtesy Peter Hemsley - The ToolPost

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01912 658397 (Newcastle upon Tyne)

Tormek SVH-320 planer blade jig complete with instructions; £80 01793 771 898 (Swindon)

Kity 613 bandsaw. 180mm depth of cut, includes stand, blades and inserts for table; £275 – buyer collects 01497 847 065 (Hereford)

Woodworker magazines -

1951-1959 complete. Many other part sets from 1960-1990; odd copies from 1920-1922. Offers 01633 874 918 (Cwmbran)

**Axminster woodturning lathe** (240 × 330mm). Extras: 16 chisels, chuck index ring and hole boring kit; £250 - buyer collects

01223 503 860 (Cambridge)

Record 521/2 ED quick-release vice, good condition: £45. Two No. Disston 558mm saw, USA, with applewood handle; £25 02086 641 4238 (D Haviland)

Black & Decker sander -1/3-sheet orbital finishing model, 135W. in good boxed condition with dust extraction kit; £10

01189 712 472 (West Berkshire)

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# Still box-making

# This excerpt of a project from the June 1955 issue of The Woodworker will certainly put your boxmaking skills to the test

Someone wrote to me the other day asking if we had any plans for a casket. The one he had in mind was a memorial version for double ashes; I was only sorry I couldn't help. But, because we all like a coincidence, this particular page from The Woodworker of June 1955 soon made itself known.

The term casket in this context of smallish rectangular box has widely been replaced by the word 'coffin', especially the variety that's found at the higher end of the market. Here, though, we're looking at nothing more than a useful little container that will both fulfil a function of containing family bits and pieces and look pretty on the sideboard.

### Plenty of scope

Box-making is as popular as it ever was and this decorative container offers plenty of scope for exercising a variety of different skills and techniques. The treatment of the casket ends allows you to practise your lapped dovetails before moving on to shaping a curved profile to each piece. There's something very satisfying about making a joint in two pieces of timber, and then shaping the finished result afterwards. Often the end result can be very impressive, especially to the casual observer.

# An attractive proposition

Once cleaned up and prepared with a toothing plane, the box is ready for veneering. Hand veneering is a skill that is often overlooked these days, particularly when it involves hide glue or Scotch glue. For anyone unfamiliar with this venerable hot glue, it's constituent body is 'hoof, horn and hide', and was still in general use in joinery shops up until the 1960s. It's the stuff that used to give glue factories a bad name, and was the final legacy that many a working horse bequeathed to humankind, sadly including the noble and exploited Nelson from Animal Farm.

# ATTRACTIVE VENEERED CASKET

BASICALLY, the box is formed by lap-dovetailing the back and sides into two thicker end pieces which are afterwards curved. The carcase is veneered and the top and bottom attached. When ready, the job is sawn in two, producing the body and lid. Beading, hinge, and feet are fitted, the job given a clean up, and finally polished.

CONSTRUCTION

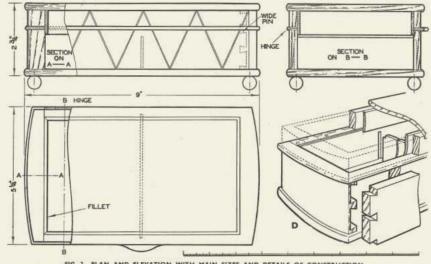
Carcase.—Prepare the front and rear pieces, and mark out the dovetails and slot for the partition as indicated by the dotted lines in Fig. 2. At this stage an arrangement for a wide pin should be made to allow for the subsequent saw cut. The root of this should be about # in. Having cut the partition housing and dovetails,

FIG. I. A USEFUL ITEM IN ANY HOME AND WOULD MAKE AN IDEAL GIFT

the pins are marked out using the tails as a template, as in Fig. 3B. This is done with a scriber, as indicated. The joint being marked out, the waste is removed from between the pins, the sections assembled dry (a check for squareness) and finally glued up. When set, the ends are curved with a smoothing plane working from the centre outward.

from the centre outward.

The carcase is now prepared for veneering, using a toothing plane, but if not to hand the surface can be suitably roughened with an old hacksaw blade.



PLAN AND ELEVATION WITH MAIN SIZES AND DETAILS OF CONSTRUCTION The partly exploded view, D, shows how the beading is mitred at the front corners. This should be trimequal 45 degree jointer owing to the different widths of side and front WOODWORKER

If anyone has yet to try their hand at Scotch glue veneering, I'd recommend it heartily. An essential part of the antique furniture restorer's toolkit, it's the closest you can get to woodworking alchemy on the bench top, involving as it does heat, steam, an element of chance and a very real risk of jeopardy. This casket job is on an achievable scale, and, with the white line inlay detail, presents an attractive proposition to all.

Once veneered, your casket can be topped and bottomed, sawn in two to create a lid, the edges cleaned up and lipped in a contrasting timber with a nice protruding profile, then hinged and finally, given feet to support it. Nice job.

More from The Woodworker archive next month...

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